

# RCS® Remote Control Systems

Push/Pull Cables • Control Levers • Pedals • Pull Only Cables



Edition 2018/2019

RCS® Remote Control Systems	Page
Push/Pull cables	
Setup and description of push/pull cables	3
Overview of push/pull cables	4
<b>Basic cable series</b>	6
Selection of cable sizes	8
Standard end parts	10
Connection type T of cable end parts	11
Connection type G of cable end parts	12
Connection type R or S of cable end parts	13
Codes of practice and health and safety regulations	14
Assembly information	15
Order key for push/pull cables	16
<b>Accessories</b>	
Clevises with snap lock pins, zinc-coated and eye ends, zinc-coated	18
Ball joints, zinc-coated and ball joints for cable size H	19
Brackets for clamp connections, clamp assemblies, U-bolt assemblies and clamps	20
Brackets for connection of bulkheads, swivel flanges for rigid end cables and rubber grommets	21
<b>Function cable with hand operation</b>	
Introduction to hand operated function cables	22
Availability of cable sizes and seals	23
Non-locking control cable – NL –	24
Twist lock control cable – TL –	25
Micro-adjust control cable – MA –	26
Spring loaded control cable – VC –	27
Foot operated cable – VFC –	28
Connections	29
Order key for push/pull cables with control heads	31

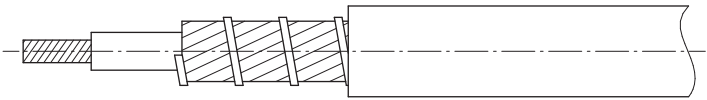
	Page
<b>Control lever systems</b>	
Control lever 14 RN 15	32
Control lever 58.5 and 58.3	33
Friction control 22.1	34
Friction control 22.3	35
MRC shift control	36
Accessories for control lever 58.x	37
Accessories for control lever 58.5	38
Accessories for friction control 22.x	39
Order key for push/pull cables for control lever systems	40
<b>Throttle pedal systems</b>	
Introduction to throttle pedal systems	42
Throttle pedals	43
Design of the cable ends for throttle pedal systems	44
Accessories for throttle pedal systems	45
<b>Brake lever systems</b>	
Technical features	46
Hand brake lever B 50452	47
Hand brake lever B 50401	48
Hand brake lever B 50513	49
Hand brake lever B 50408	50
Hand brake lever B 50410	51
Design of the cable ends for brake lever systems	52
Accessories for brake lever systems	53
<b>Pull Only Cables</b>	
Introduction to Pull Only Cables	54
Wire/strand end parts	55
Thread conduit caps	58
Conduit caps	59
Pull Only Cables end parts	60
Motor stop cable	61
<b>Product overview</b>	
Product overview	62

## Setup

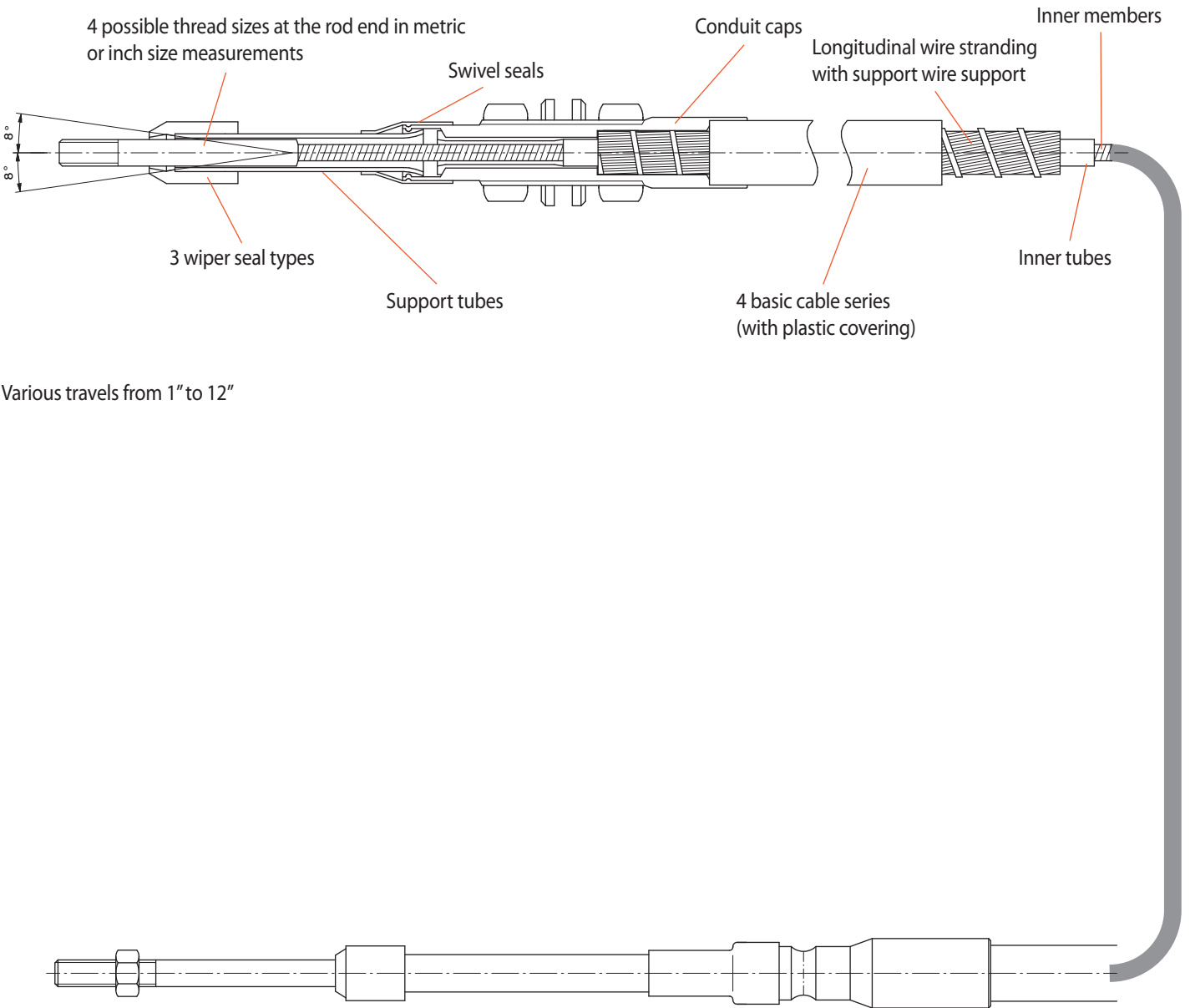
A flat wire-reinforced inner member is located in a conduit, which is formed by an inner-lying inner tube and specially arranged longitudinal wires (linear wire stranding). The linear wires on the other hand (with the exception of types 770) are supported and fixed by a support wire winding. A plastic extrusion is doing the outer coverage of the conduit. For the universal connection of elements, the inner member and

conduit are supported with pressed on zinc-coated or stainless steel end parts. The push/pull cables are designed lightly gliding and are supplied with low-friction permanent

lubrication. Effective seals protect the moving elements of the push/pull cables against external influences such as spray water, dust and corrosion.


























































Setup of the conduit, depicted with the inner member



Various travels from 1" to 12"

# Overview of push/pull cables

Cable series	Bend radius		Temperature range		Sliding characteristics		Design of end parts	
	small	medium	medium	high	light	extra light	zinc-coated	stainless
383								
384								
283								
284								
275								
274								
775								
774								

Cable sizes				
U	V	L	M	H
<ul style="list-style-type: none"> <li>• Travel up to 76 mm</li> <li>• Push forces 70 N</li> <li>• Pull forces 450 N</li> </ul>	<ul style="list-style-type: none"> <li>• Travel up to 152 mm</li> <li>• Push forces 135 N</li> <li>• Pull forces 540 N</li> </ul>	<ul style="list-style-type: none"> <li>• Travel up to 152 mm</li> <li>• Push forces 225 N</li> <li>• Pull forces 1 035 N</li> </ul>	<ul style="list-style-type: none"> <li>• Travel up to 152 mm</li> <li>• Push forces 450 N</li> <li>• Pull forces 1 800 N</li> </ul>	<ul style="list-style-type: none"> <li>• Travel up to 152 mm</li> <li>• Push forces 1 350 N</li> <li>• Pull forces 4 500 N</li> </ul>
				
				
				
				
				
				
	*			
	*			

\* upon request

Our cable series are offered in five sizes. In the standard version, three end part configurations are designed. There are six different types of tra-

vel, which can be combined with three different seals. A multitude of additional possibilities for configuration and variation in the setup of the

cables are possible in order to create a solution that fits to the respective application.

### Series 383 and 384

- Series 383 with zinc-coated end parts and stainless steel rod ends
- Series 384 with stainless steel end parts
- PTFE-covered inner member
- Highly efficient without stick-slip effect
- Remarkably small bend radii
- Extremely smooth at high loads
- Colour: blue/red marked
- For cable sizes V, L and M
- High temperature range from -50 °C to +100 °C (constant) and short term up to +170 °C



6-1

### Series 283 and 284

- Series 283 with zinc-coated end parts and stainless steel rod ends
- Series 284 with stainless steel end parts
- PTFE-covered inner member
- Highly efficient without stick-slip effect
- Remarkably small bend radii
- Extremely smooth at high loads
- Colour: blue/yellow marked
- For cable sizes U, V, L, M and H
- High temperature range from -50 °C to +90 °C (constant) and short term up to +150 °C



6-2

### Series 275 and 274

- Series 275 with zinc-coated end parts and stainless steel rod ends
- Series 274 with stainless steel end parts
- Inner member stainless steel reinforced
- Highly efficient
- Remarkably small bend radii
- Extremely smooth
- High travel frequencies
- Colour: blue
- For cable sizes U, V, L and M
- High temperature range from -50 °C to +90 °C (constant) and short term up to +110 °C



### Series 775 and 774

- Series 775 with zinc-coated end parts and stainless steel rod ends
- Series 774 with stainless steel end parts
- Attractive pricing
- Highly efficient
- For applications without special requirements
- Colour: black
- For cable sizes U, L and M
- High temperature range from -50 °C to +80 °C (constant) and short term up to +100 °C



# Selection of cable sizes

**Cable sizes, maximum travel, bend radii, seals, thread rod ends, outer diameter of conduits and push and pull forces depending on the travel**



## Cable sizes, maximum travel, bend radii, seals, thread rod ends and outer diameter of conduit

Cable size	Max. travel mm	Bend radius for cable series					Seals			Thread rod ends		Outer diameter of conduit for cable series			
		383/384	283/284	275/274	775/774		No. 05 for normal applications	No. 10* for fine dust	No. 20* for extreme conditions	metric	inch	383/384	283/284	275/274	775/774
U	76	-	51	51	115		●	●		M5	10-32	-	6,8	6,8	7,5
V	152	51	51	51	-		●	●		M5	10-32	8,8	8,8	8,8	-
L	152	76	76	76	180		●	●	●	M6	1/4-28	12,2	13,3	13,3	11,0
M	152	127	127	127	230		●		●	M8	5/16-24	14,5	15,0	15,0	14,0
H	152	-	152	-	-		●		●	M10	3/8-24	-	17,6	-	-

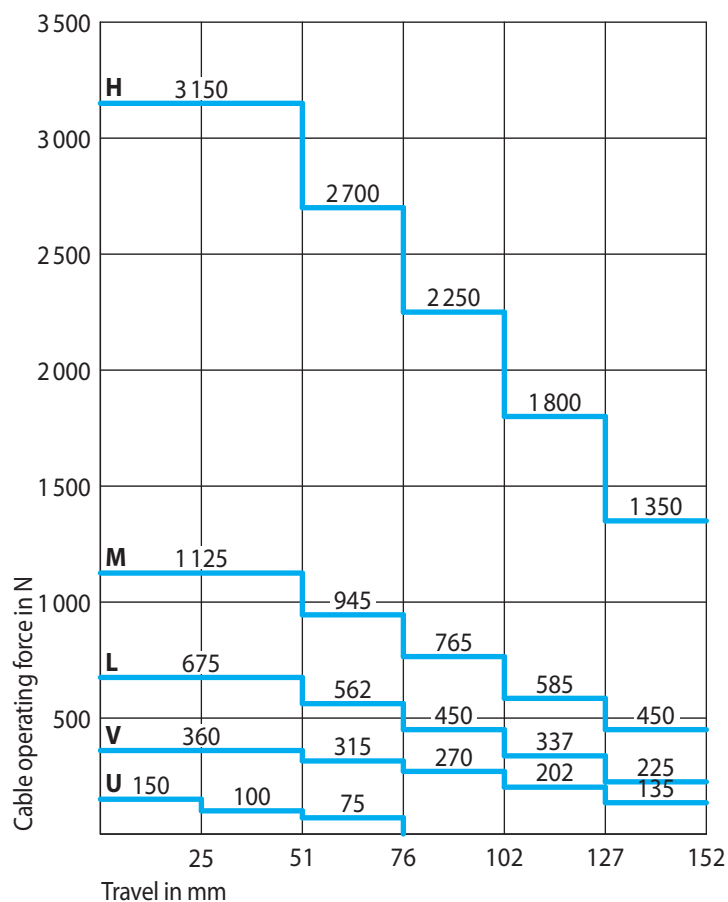
\* except for connections S and R

## Push and pull forces depending on the travel

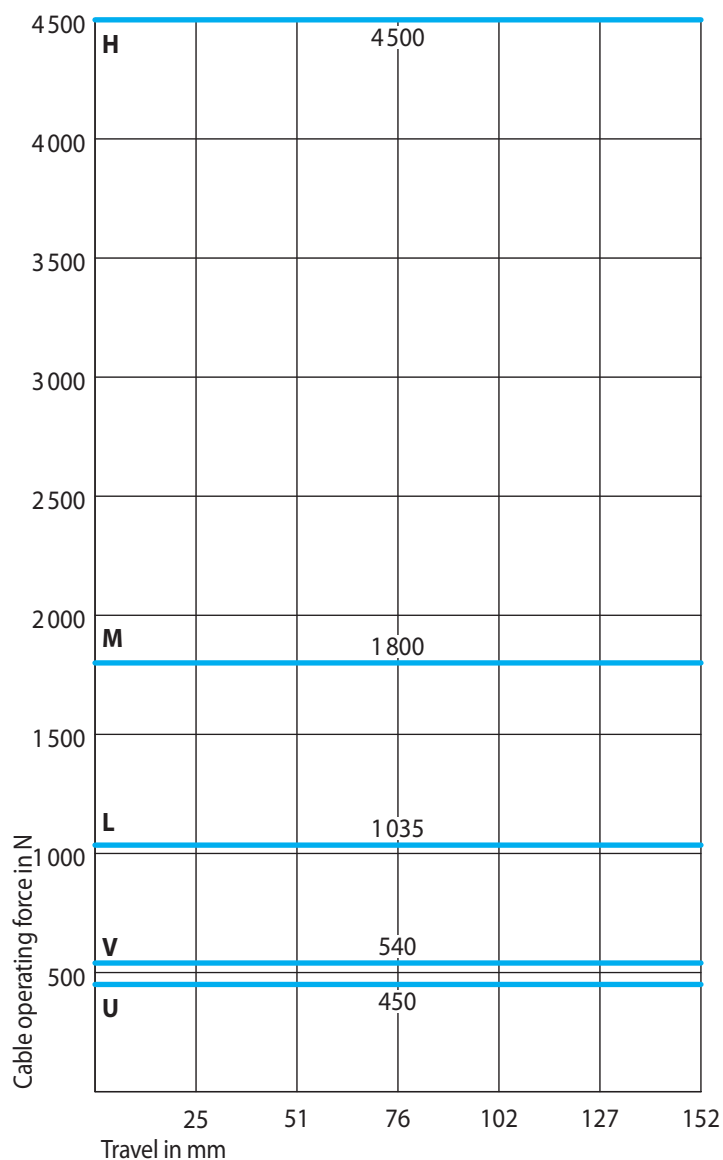
The specified forces are applicable for use in permanent operation with a long service life.

A safety factor of 1.5 can be used to calculate the temporary overloads.

Push forces diagram



Pull forces diagram





### Efficiencies

The efficiency of a push/pull cable (the relation of the required cable operating force to a given output force) is particularly influenced by the number of bends laid in the cable.

The cable operating force can be calculated in accordance with the following formula:  
Operating force = Output force x Efficiency factor

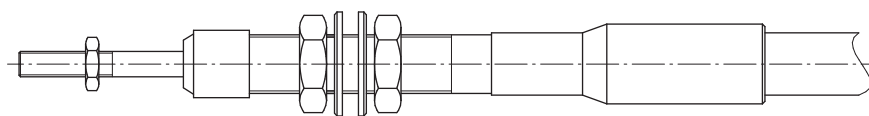
$\alpha$  is the sum of all cable bends in degrees. In addition to the cable bends, the cable length is to be taken into consideration with 15° for every 1 meter.

Series	Efficiency factor for $\alpha$				
	180°	360°	540°	720°	900°
383 + 384	1,17	1,36	1,59	1,85	2,16
283 + 284	1,17	1,36	1,59	1,85	2,16
275 + 274	1,31	1,72	2,26	2,96	3,88
775 + 774	1,31	1,72	2,26	2,96	3,88

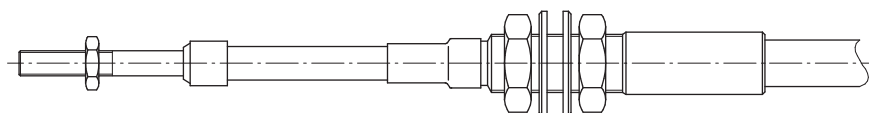
### Example of efficiency factor

Cable series	283
Cable size	L
Cable length	12 m
Sum of bends	180°
alpha	$180^\circ + 12 \times 15^\circ = 360^\circ$
Efficiency factor	1,36

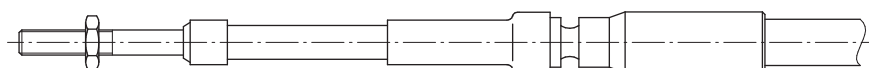
### Connection types of cable end parts



Rigid screw endfitting type S and R



Swiveled bulkhead endfitting type T

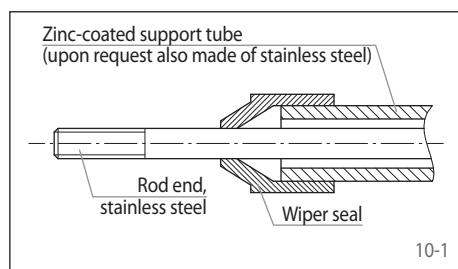


Swiveled clamp endfitting type G

### Wiper seals

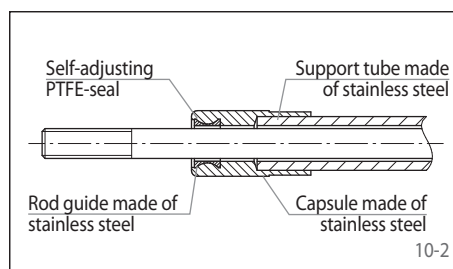
#### Seal no. 05

The rubber wiper seal has been proven for all cable sizes for normal applications in the entire machine construction. Upon request also with a support tube from stainless steel.



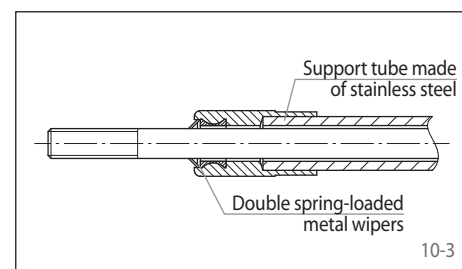
#### Seal no. 10

Automatic self-adjusting PTFE wiper seal in case of wear for cable sizes U, V and L. Protects well against fine dust.



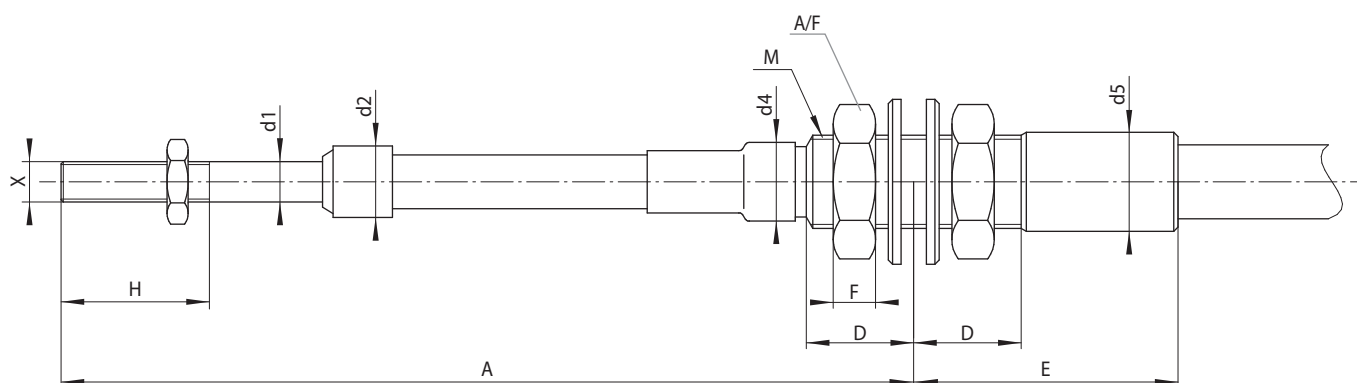
#### Seal no. 20

Design like seal no. 10 with additional double spring-loaded metal wiper, for cable sizes L, M and H. For extreme conditions such as sludge, coarse dirt and ice.



### Lubrication

RCS® push/pull cables are designed and lubricated for optimum performance and life. Under no circumstances should you re-lubricate or attempt any other kind of maintenance!



11-1

Cable size	d1 mm	d2* mm	d4 mm	d5 mm	D mm	E mm	F mm	H mm	M	A/F mm	X
U	4,75	10	11,3	11,5	14	33	7	20	7/16-20-UNF	17	M 5
V	4,75	10	11,3	11,5	14	33	7	20	7/16-20-UNF	17	M 5
L	6,35	13	14,7	16,5	19	51	8	24	M 16 x 1,5	24	M 6
M	8	14,5	16,3	19,3	22	54	9	24	M 18 x 1,5	27	M 8
H	9,5	17,0	18,5	23,4	25	66	10	35	M 22 x 1,5	32	M 10

\* for seal no. 05

## Dimensions A

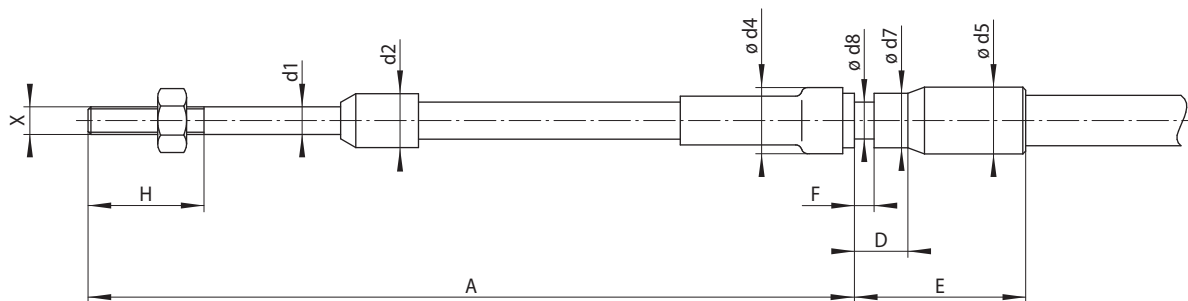
Cable size	Push/pull cables* at travel of						Cable with hand operation**				Cables for levers***		
	25 mm	51 mm	76 mm	102 mm	127 mm	152 mm	25 mm	51 mm	76 mm	TL (2) 38 mm	14RN15 mm	58.x mm	22.x mm
U	111	149	187	-	-	-	124	174	225	161	151	-	-
V	111	149	187	225	263	301	124	174	225	-	-	187	189
L	117	155	193	231	270	308	130	180	231	-	-	193	-
M	-	166	205	243	281	319	-	-	-	-	-	-	-
H	-	182	221	259	297	335	-	-	-	-	-	-	-

\* Rod end in mid position

\*\* Rod end completely moved out (see from page 22), TL (1) = variant 1, TL (2) = variant 2 (see page 25)

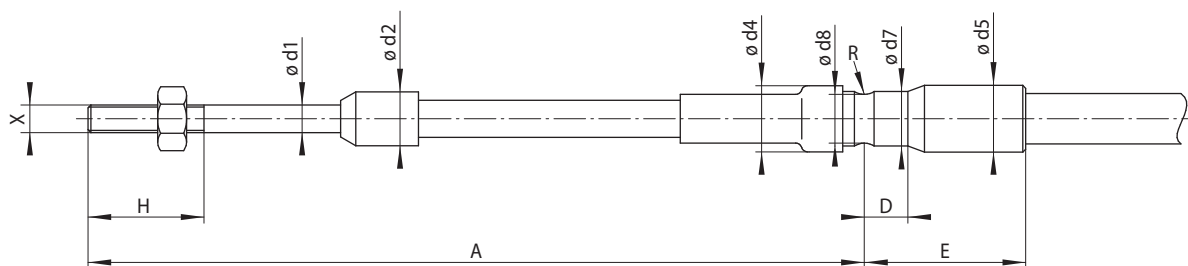
\*\*\* Rod end in mid position (see from page 32)

Can also be supplied with end parts made of stainless steel.



12-1

for cable sizes U and V



12-2

for cable sizes L, M and H

Cable size	d1 mm	d2* mm	d4 mm	d5 mm	d7 mm	d8 mm	D mm	E mm	F mm	H mm	R mm	X
U	4,75	10	11,3	10,2	9,4	6,35	11	29,5	3,4	20	-	M 5
V	4,75	10	11,3	11,5	9,4	6,35	8,7	29,5	3,4	20	-	M 5
L	6,35	13	14,7	16,5	12,7	10,4	11,1	44,5	-	24	4,3	M 6
M	8	14,5	16,3	19,3	14,3	11,9	18	48	-	24	4,3	M 8
H	9,5	17	18,5	23,4	16,6	12,7	9,6	67	-	35	5	M 10

\* for seal no. 05

## Dimensions A

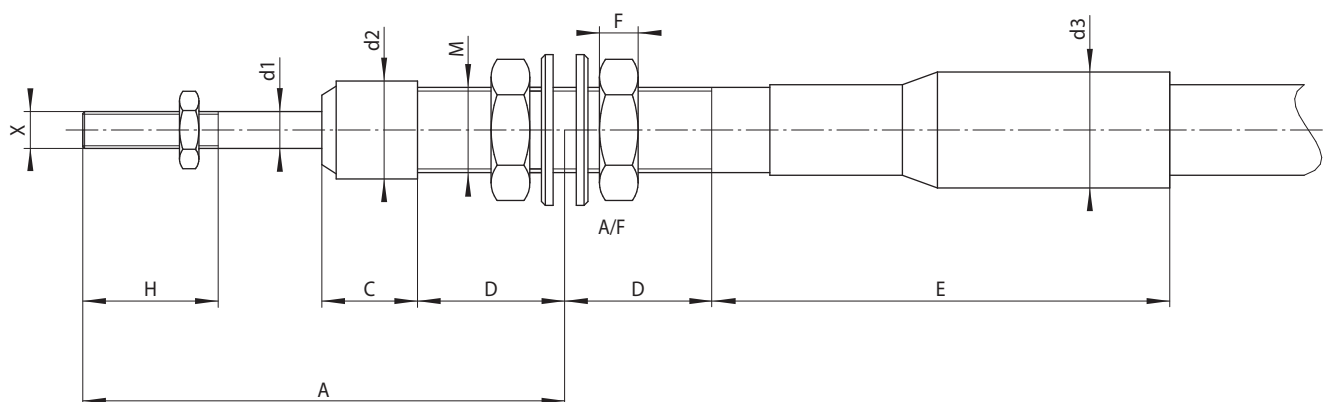
Cable size	Push/pull cables* at travel of						Cable with hand operation** NL/TL (1)/MA				Cables for operating level***		
	25 mm	51 mm	76 mm	102 mm	127 mm	152 mm	25 mm	51 mm	76 mm	TL (2) 38 mm	14RN15 mm	58.x mm	22.x mm
U	94	132	170	-	-	-	107	157	208	144	134	-	-
V	94	132	170	208	246	284	107	157	208	-	-	170	172
L	102	140	178	216	254	292	114	165	216	-	-	178	-
M	-	149	187	225	263	301	-	-	-	-	-	-	-
H	-	170	208	246	284	322	-	-	-	-	-	-	-

Can also be supplied with end parts made from stainless steel.

\* Rod end in mid position

\*\* Rod end completely moved out (see from page 22), TL (1) = variant 1, TL (2) = variant 2 (see page 25)

\*\*\* Rod end in mid position (see from page 32)



13-1

Cable size	C mm	d1 mm	d2 mm	d3 mm	E mm	F mm	H mm	M	A/F mm	X
U	13	4,75	10	12,7	35	5	20	M 10 X 1	17	M 5
V	13	4,75	10	12,7	35	5	20	M 10 X 1	17	M 5
L	16	6,35	13	16,5	-	7	24	7/16-20 UNF	17	M 6
M	16	8	14,5	19,3	71	6	24	M 12 X 1	19	M 8
H	16,5	9,5	17	23,4	70	8	35	M 16 X 1,5	24	M 10

### Dimensions A

Cable size	Push/pull cables* at travel of						Cable with hand operation** NL/TL (1)/MA				Cables for operating level***		
	25 mm	51 mm	76 mm	102 mm	127 mm	152 mm	25 mm	51 mm	76 mm	38 mm	14RN15 mm	58.x mm	22.x mm
U	63	88	113	-	-	-	77	116	153	103	90	-	-
V	63	88	113	138	163	-	77	116	153	-	-	115	115
L	-	90	113	126	138	151	-	116****	151****	-	-	115	-
M	-	94	119	146	-	-	-	-	-	-	-	-	-
H	-	-	-	161	-	211	-	-	-	-	-	-	-

\* Rod end in mid position

\*\* Rod end completely moved out (see from page 22), TL (1) = variant 1, TL (2) = variant 2 (see page 25)

\*\*\* Rod end in mid position (see from page 32)

\*\*\*\* only for hand operation TL and MA, not available for NL

### Dimensions D for cable size and travel:

Cable size	Travel					
	25 mm	51 mm	76 mm	102 mm	127 mm	152 mm
U	15	27	40	-	-	-
V	15	27	40	53	-	-
L	-	20	30	30	30	30
M	-	24	36	50	-	-
H	-	-	-	54	-	79

### Dimensions E for cable size L and travel:

Cable size	Travel				
	51 mm	76 mm	102 mm	127 mm	152 mm
L	73	79	104	129	155

Cable series 275 and 283 are available for cable sizes U-M.

The cable size H can only be supplied with cable series 283.

"S" denotes the rigid cable ends for cable sizes U, V, M and H. "R" is the designation for a rigid end for cable size L.

## Codes of practice

- Do not install push/pull cables in any applications, which may exceed the design parameters of the cable.
- Do not remove seals! RCS® cables cannot be disassembled!
- RCS® push/pull cables are designed and lubricated for optimum performance and life; under no circumstances should you re-lubricate or attempt any other kind of maintenance.
- Cables that have moisture inside or are frozen should be replaced. Do not apply heat to remove moisture.
- Protect cables from physical damage such as bending, crushing, heavy vibration and from contamination such as moisture, dirt or chemicals. Do not paint ends!
- A gradual or sudden increase in friction or decrease in the travel length of a control cable is an indication of possible performance issues and/or cable failure. We recommend that you replace the cable in this event as a precautionary measure.

## Health and safety regulations

Control cables and actuators contain thermoplastic materials in the form of knobs etc. or as covering and/or lining of assemblies.

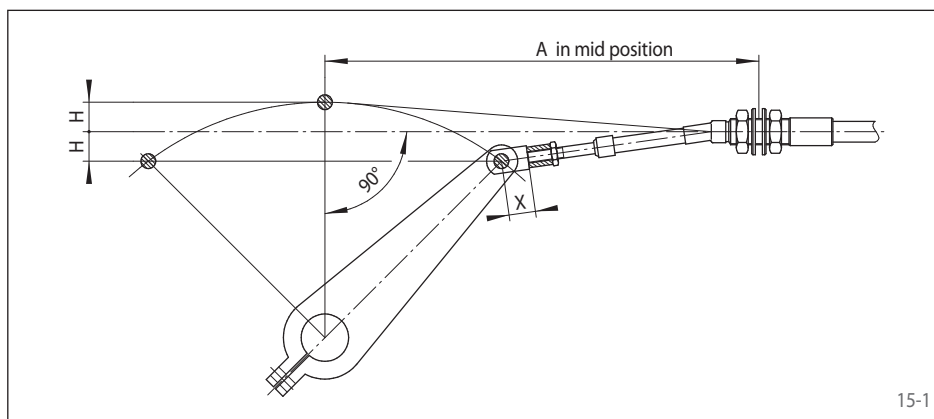
These materials include polypropylene, acetyl resin, high and low-density polyethylene, nylon etc. In normal use these do not constitute any

hazard. But, if burnt, they may give fumes, some of which may be toxic, and all recommended fire-fighting precautions shall be observed.

If a push/pull cable is connected to a lever that describes an arc, it should be adjusted at the right angle to half travel position and half the height of the segmental arc of the lever.

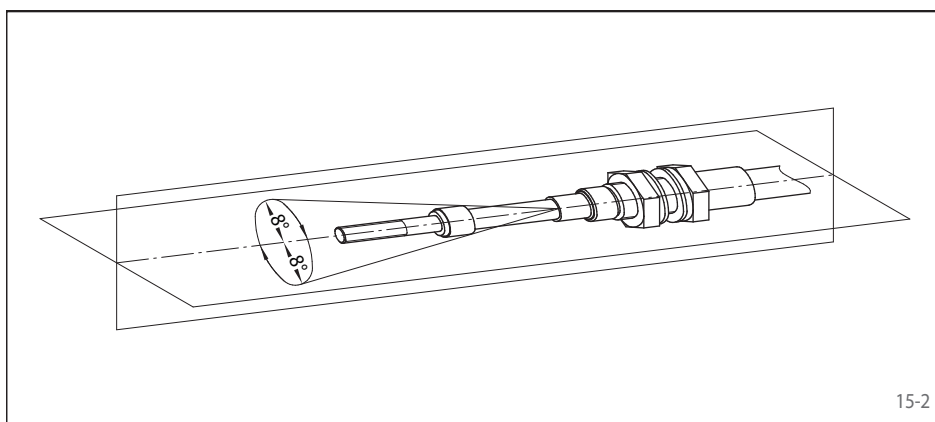
Swiveled endings (connection types G and T) allow for an arc from centerline of  $\pm 8^\circ$  all way around.

(P-P-Cables with swiveled end)

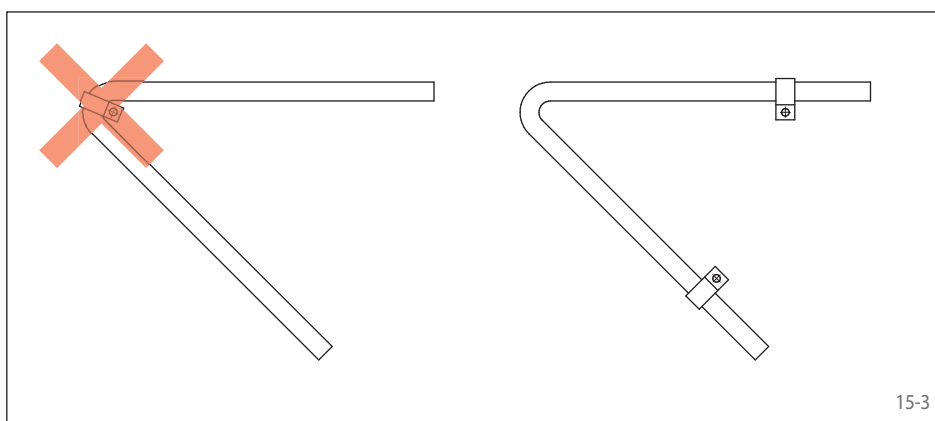


For linear movement only (e.g. spool valves) accurate alignment of both planes of the cable and the object to be controlled is necessary!

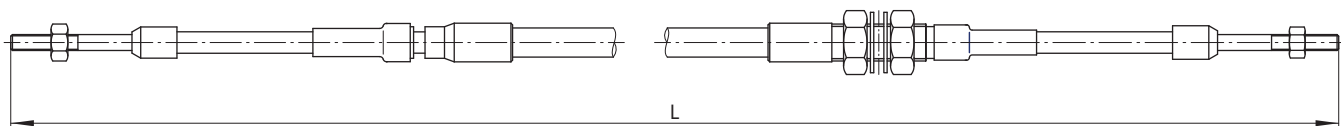
(P-P-Cables with swiveled end)



Only correct installation and layout of push/pull cables assure proper function. Anchor cable end parts securely so that they cannot move or twist under load. Clamps shall be placed at one-meter intervals; they should fasten the cable but not squeeze it, in bends only at the ends of bend radii.



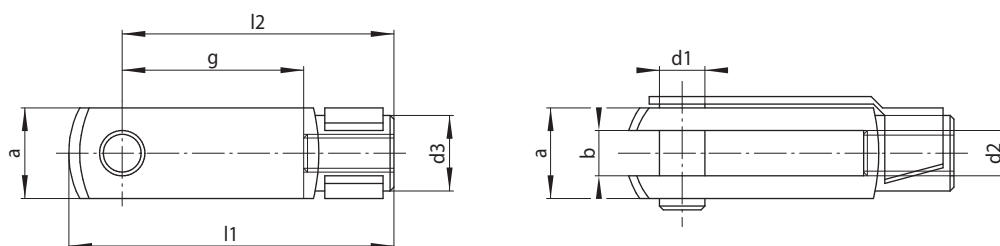
Features	Order code:	283 - L - G 05 M / T 10 M - 3 - 0200												
<b>Cable series:</b> 383/384, 283/284, 275/274, 775/774														
<b>Cable size:</b> Selection according to operating forces, connection threads, bend radii etc.: U, V, L, M or H														
<b>Connection first cable end part:</b> In accordance with installation conditions T, G, S or R														
<b>Wiper seal:</b> Seal no. 05, 10 or 20														
<b>Thread at rod end:</b> The size of the connection thread can be calculated from the cable size, M for metric, Z for inch (UNF) thread														
<b>Connection second cable end part:</b> In accordance with installation conditions T, G, S or R														
<b>Wiper seal:</b> Seal no. 05, 10 or 20														
<b>Thread at rod end:</b> M for metric, Z for inch (UNF) thread														
<b>Travel code:</b> The following values are possible as travel code, in compliance with a travel in mm:  <table><tr><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td></tr><tr><td>25</td><td>51</td><td>76</td><td>102</td><td>127</td><td>152</td></tr></table>	1	2	3	4	5	6	25	51	76	102	127	152		
1	2	3	4	5	6									
25	51	76	102	127	152									
<b>Cable length:</b> Entire length, denoted in cm, principally 4-figure: e. g.: 3 400 mm = -0340 e. g.: 5 m = -0500														







### Clevises with snap lock pins, zinc-coated

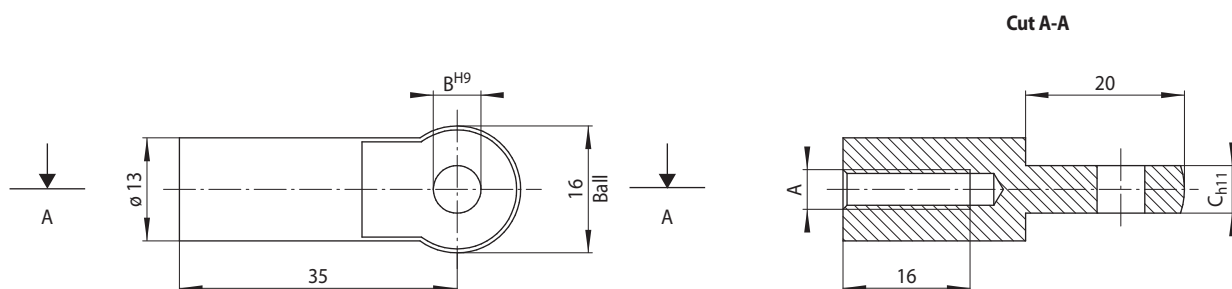


18-1

Cable size	Size	a mm	b mm	d1 mm	d2	d3 mm	g mm	l1 mm	l2 mm	Art.-No.
U/V	G 5 x 10	10	5	5	M 5	9	10	26	20	5233-005001
	G 5 x 20	10	5	5	M 5	9	20	36	30	5233-005002
	G 6 x 12	12	6	6	M 5	10	12	31	24	5233-006003
	G 6 x 24	12	6	6	M 5	10	24	43	36	5233-006004
	G 8 x 32	16	8	8	M 5	14	32	58	47	5233-008009
L	G 6 x 12	12	6	6	M 6	10	12	31	24	5233-006001
	G 6 x 24	12	6	6	M 6	10	24	43	36	5233-006002
	G 8 x 16	16	8	8	M 6	14	16	42	32	5233-008003
	G 8 x 32	16	8	8	M 6	14	32	58	47	5233-008004
	G 10 x 40	20	10	10	M 6	18	40	72	60	5233-010204
M	G 8 x 16	16	8	8	M 8	14	16	42	32	5233-008001
	G 8 x 32	16	8	8	M 8	14	32	58	47	5233-008002
	G 10 x 40	20	10	10	M 8	18	40	72	60	5233-010203
	G 12 x 48	24	12	12	M 8	20	48	86	72	5233-012001
H	G 10 x 20	20	10	10	M 10	18	20	52	40	5233-010001
	G 10 x 40	20	10	10	M 10	18	40	72	60	5233-010002
	G 12 x 48	24	12	12	M 10	20	48	86	72	5233-012002

Can also be supplied with end parts consisting of stainless steel with bolts and split pin or locking ring.

### Eye ends, zinc-coated

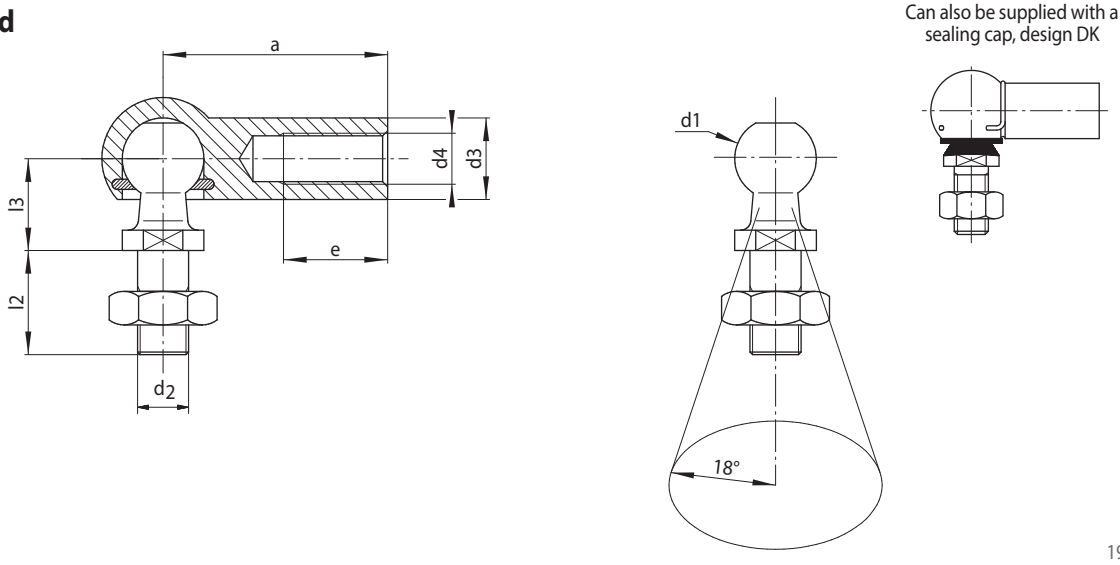


18-2

Cable size	A mm	B mm	C mm	Art.-No.
U/V	M 5	6	6	5030-005002
L	M 6	6	6	5030-006001
	M 6	8	8	5030-006002
M	M 8	8	8	5030-008002
	M 8	6	6	5030-008006



Ball joints, zinc-coated

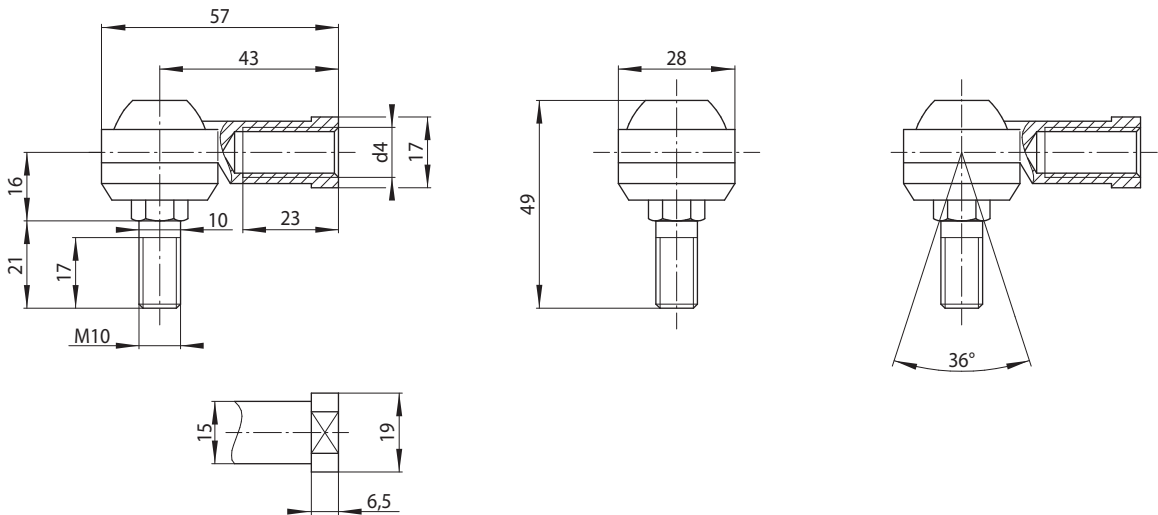


19-1

Cable size	Size	a mm	d1 mm	d2	d3 mm	d4	dk mm	e mm	l2 mm	l3 mm	Art.-No.
U/V	CS8	22	8	M 5	8	M 5	13	10	10	9	5234-008001
	CS10/M5	25	10	M 6	10	M 5	15	11	12	11	5234-010002
	CS10/M5DK	25	10	M 6	10	M 5	15	11	12	11	5234-010102
L	CS10	25	10	M 6	10	M 6	15	11	12	11	5234-010001
	CS13/M6	30	13	M 8	13	M 6	19	14	16	13	5234-013002
M	CS13	30	13	M 8	13	M 8	19	14	16	13	5234-013001
	CS16/M8	35	16	M 10	16	M 8	24	15	19	16	5234-016002
H	CS16 DK	35	16	M 10	16	M 10	24	15	19	16	5234-016101

Can also be supplied with end parts consisting of stainless steel.

Ball joints for cable size H



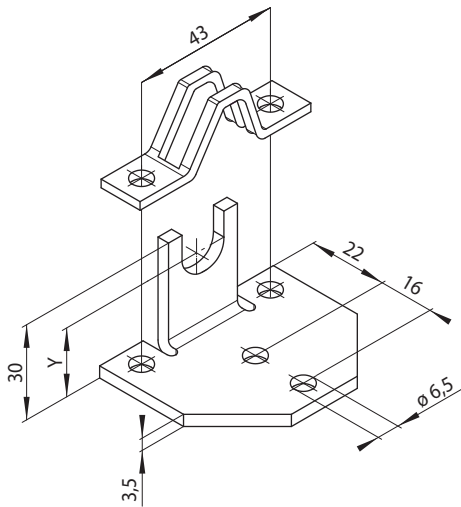
19-2

Cable size	d4	Art.-No.
H	M 10	5234-010100
	M 10*	5234-010101

\* left



Brackets for clamp connections

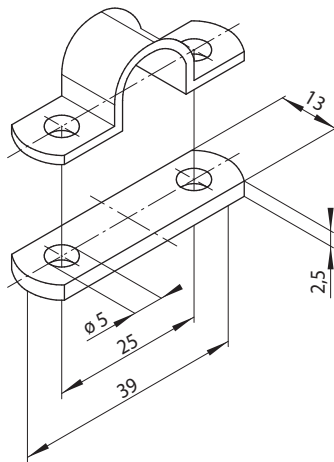


20-1

Cable size	Y mm	Art.-No.
U/V	20	3561-010272
L	22	3561-010272
M	23	3561-010272

With two 1/4-20 x 1-UNC hexagonal bolts and 1/4-20 x 5/8-UNC nuts each

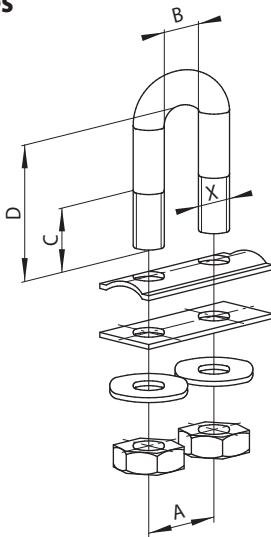
Clamp assemblies



20-2

Cable size	Art.-No.
U/V	3563-000001

U-bolt assemblies

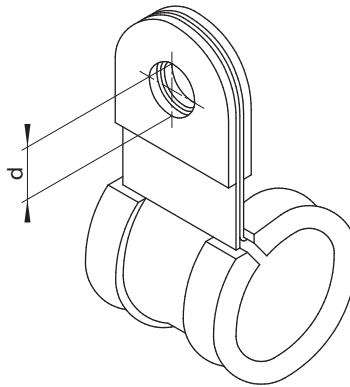


20-3

Cable size	A mm	B mm	C mm	D mm	X	Art.-No.
U/V	15	8	16	26	M 6	3563-001001*
L/M/H	20	12	18	38	M 8	3563-001008

\*differs from illustration

Clamps

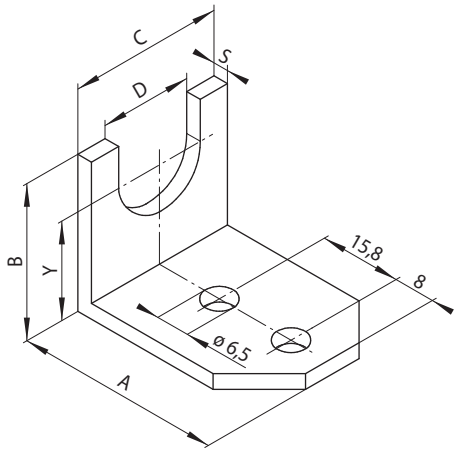


20-4

Cable size	d mm	Art.-No.
U	5,2	1563-001004
V	6,4	1563-001005
L/M	6,4	1563-001006
H	8,4	1563-001007



Brackets for connection of bulkheads

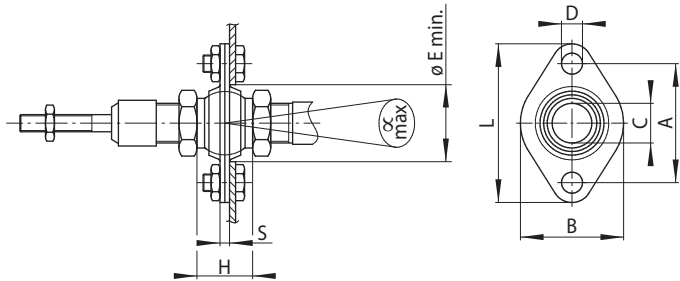


21-1

Cable size	A mm	B mm	C mm	D mm	S mm	Y mm	Art.-No.
U/V	40	30	30	12	3	22	3561-013004
L/M	42	32	38	18	4	23	3561-010275

With two M6x20 hexagonal screws and M6 DIN 985 screws

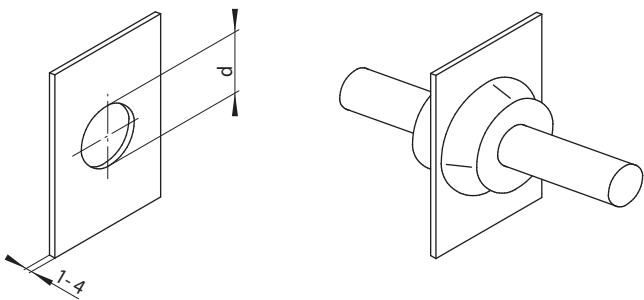
Swivel flanges for rigid end cables



21-2

Cable size	A mm	B mm	C mm	D mm	E mm	H mm	L mm	S mm	α	Art.-No.
U/V	30	26	10,1	5,3	19,5	14	40	2,4	16°	5154-010001
L/M	40	30	12,1	6,3	26	16	52	4	16°	5154-012003
H	52	43	16	8,3	35	24	72	5	16°	5154-016001

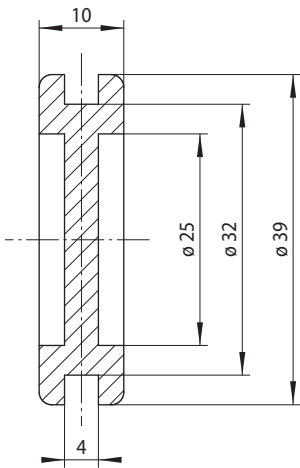
Rubber grommets for dust and watertight cable feedthroughs



21-3

Cable size	d mm	Art.-No.
U/V	19	5165-019001
L	23	5165-023001
M/H	29	5165-029001

Rubber grommets for all cable sizes



21-4

Cable size	Art.-No.
U/V/L/M/H	5165-032001



22-1

## Basic functions

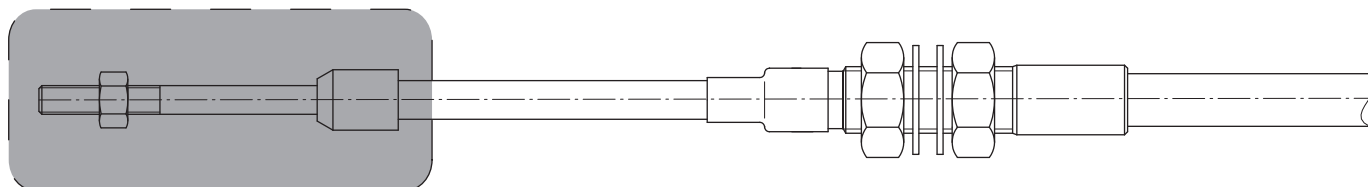
- Non-Locking Control Cable without locking mechanism, button or T-handle (optional)
- Twist Lock Control Cable with T-handle and locking mechanism
- Micro-adjust control cable with quick adjustment via pressure button and fine adjustment with turn handle
- Spring Loaded Control Cable for T-handle (optional) with spring return to mid position

# Availability of cable sizes and seals

for cable series 283, 275 and 775

**RINGSPANN®**

**RCS**



23-1

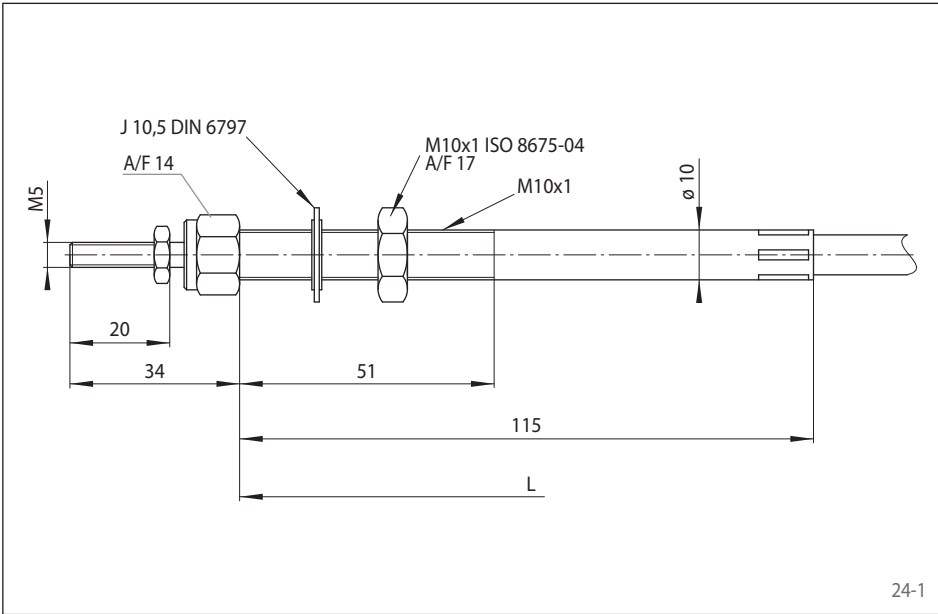
Cable size	Cable series	Outer diameter mm	Thread of rod ends metric/inch	Non-locking control cable – NL – Travel adjustment with button or T-handle	Twist lock control cable – TL – Travel adjustment and one-handed locking mechanism	Micro-adjust control cable – MA – Quick adjustment via pressure button	Spring loaded control cable – VC – Hand operated with spring return	Foot operated cable – VFC – Button with rubber cap
U	283 + 275 775	6,8 7,5	M5 10-32	●	●	●		
V	283 + 275	8,8	M5 10-32	●	●	●	●	●
L	283 + 275 775	13,3 11	M6 1/4-28		●	●		

## Cable operating forces (N)

Cable size	Cable series	Non-locking control cable – NL – Travel adjustment with button or T-handle				Twist lock control cable – TL – Travel adjustment and one-handed locking mechanism				Micro-adjust control cable – MA – Quick adjustment via pressure button				Spring loaded control cable – VC – Hand operated with spring return		Foot operated cable – VFC – Button with rubber cap
		Travel Push			Travel Pull	Travel Push			Travel Pull	Travel Push			Travel Pull	Travel Push	Travel Pull	
		25 mm	51 mm	76 mm		25 - 76 mm	25 mm	51 mm		76 mm	25 - 76 mm	25 mm				51 mm
U	283 + 275	150	100	70	250	15	10	5	250	15	10	5	250	-	-	-
	775	180	150	100	180	180	150	100	180	180	150	100	180	-	-	-
V	283 + 275	250	220	200	250	50	40	30	250	50	40	30	250	180	250	250
L	283 + 275 775	-	-	-	-	180	150	100	180	180	150	100	180	-	-	-

# Non-locking control cable – NL –

## Travel adjustment with button or T-handle



### Features

- Easy to use
- Cost-effective and universal

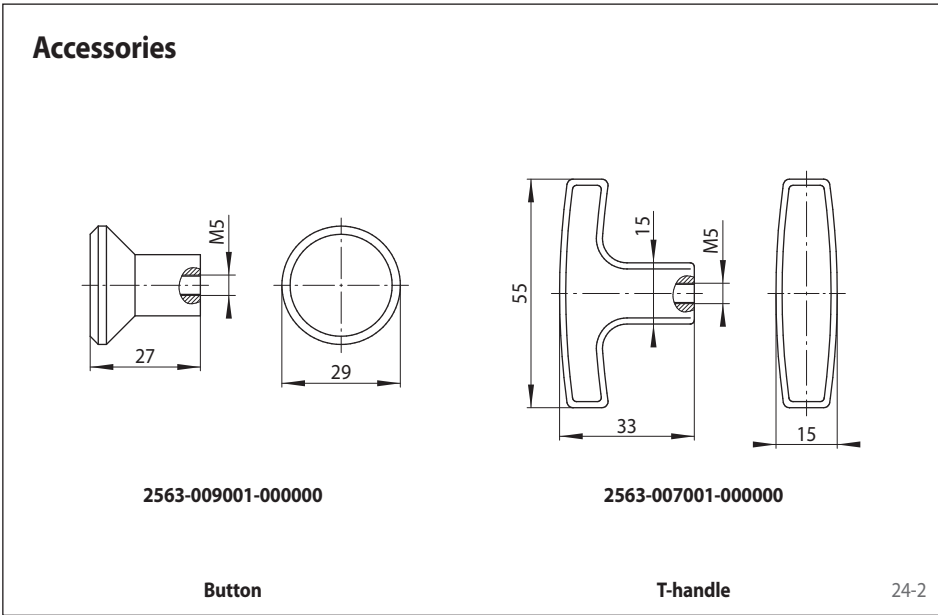
For more information on the design of the cable ends, see page 11 to 13.

### Accessories

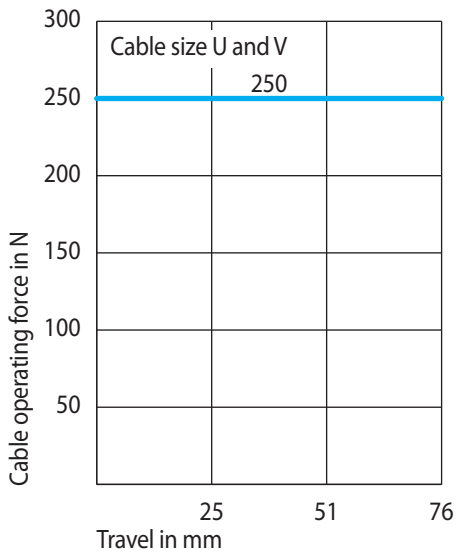
Material: plastic, black

Marking: None, STOP or on request.

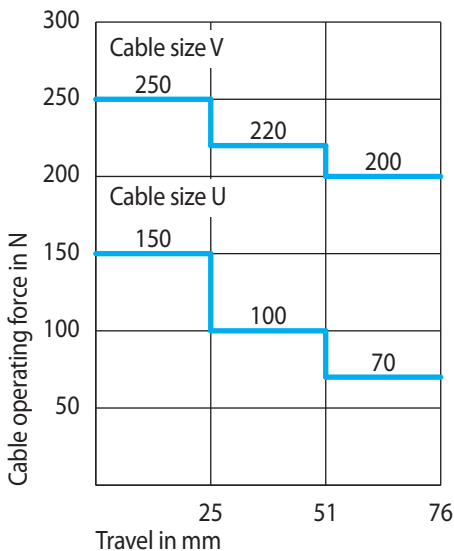
Button or T-handle are not included in the scope of delivery of the cable.



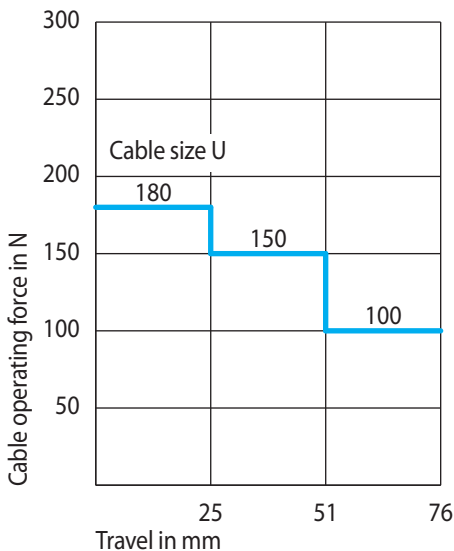
### Pull force series 283 and 275



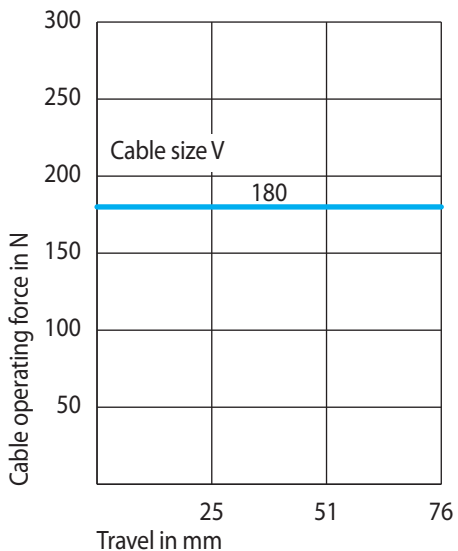
### Push force series 283 and 275



### Push force series 775



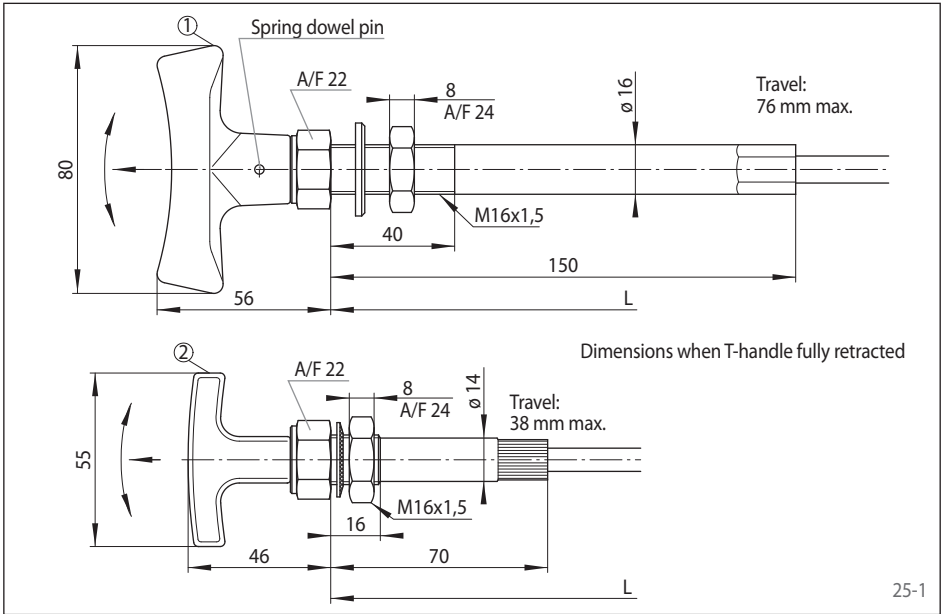
### Pull force series 775





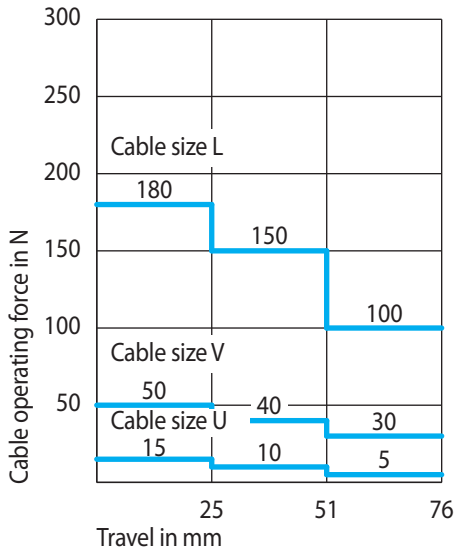
# Twist lock control cable – TL –

## Travel adjustment and one-handed locking mechanism with T-handle

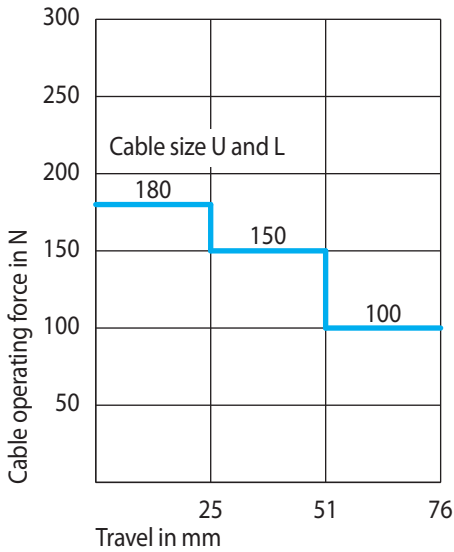


- ### Features
- Travel adjustment and locking mechanism with one hand
  - Easy release and locking
  - Version (1) for max. travel 76 mm or version (2) for max. travel 38 mm
- For more information on the design of the cable ends, see page 11 to 13.

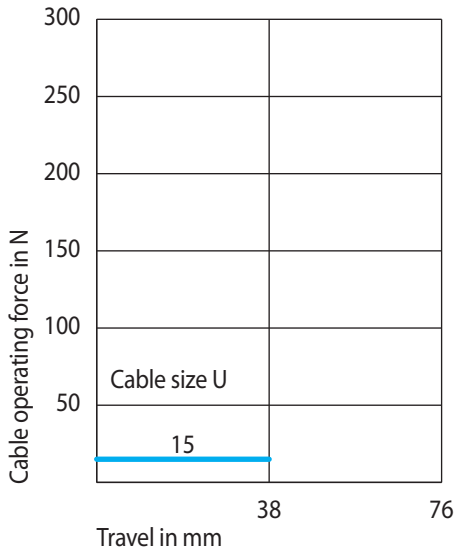
Push force series 283 and 275 - Version 1



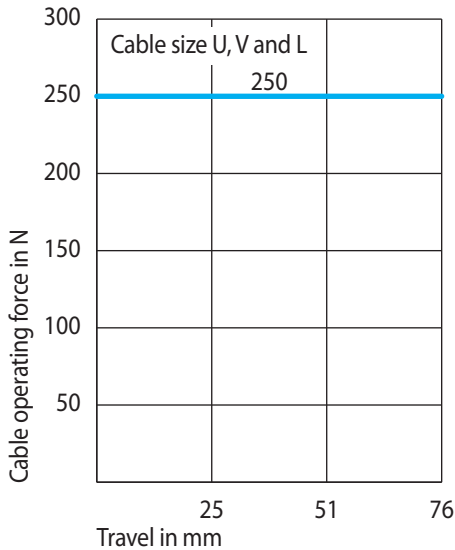
Push force series 775 - Version 1



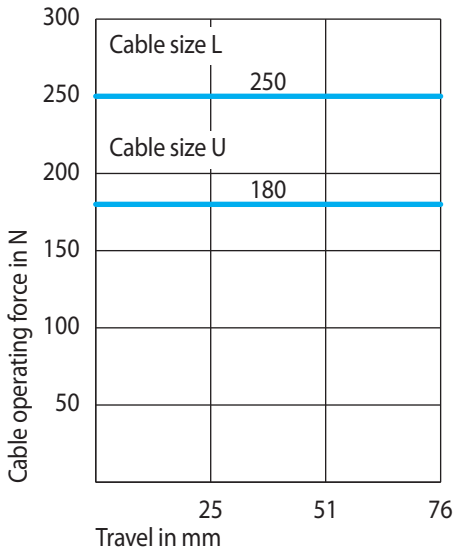
Push force series 275 - Version 2



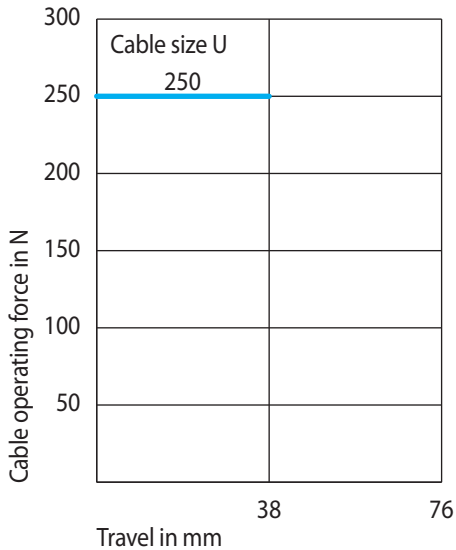
Pull force series 283 and 275 - Version 1

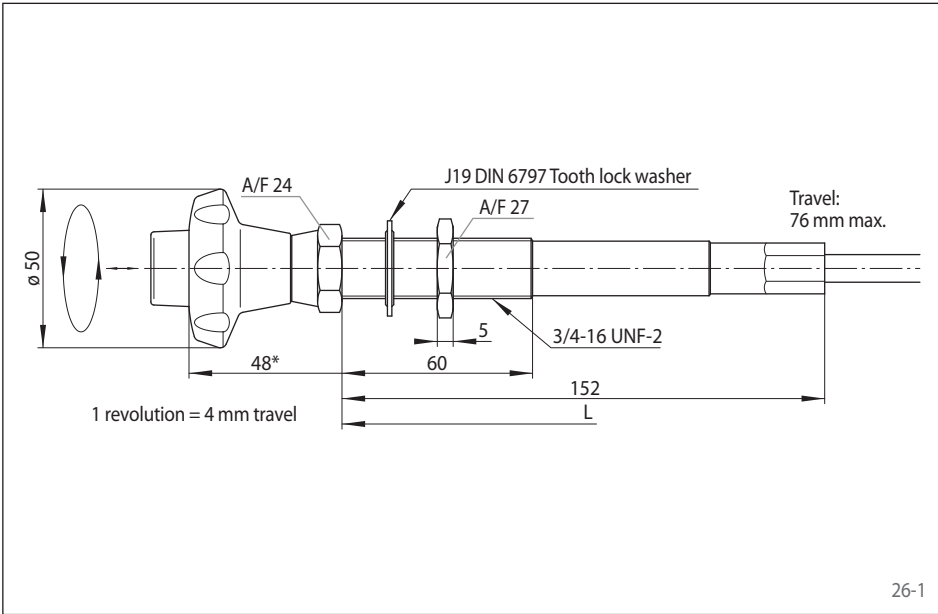


Pull force series 775 - Version 1



Pull force series 275 - Version 2



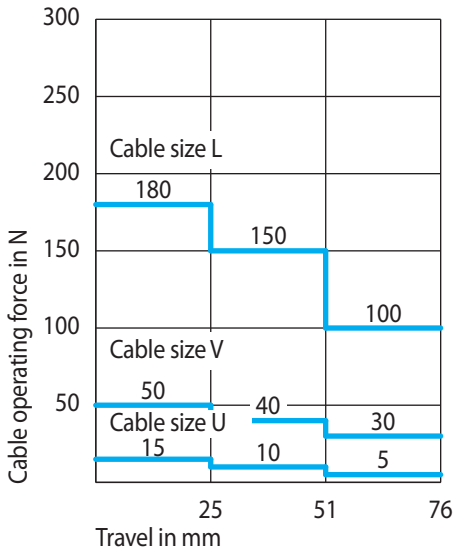


Features

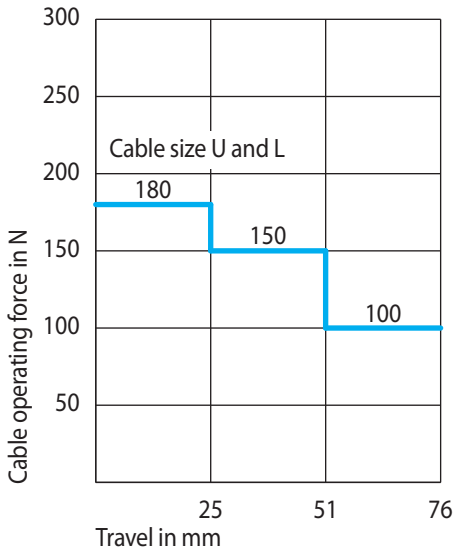
- Quick adjustment via pressure button
- Fine adjustment with a rotating handle
- Emergency off function

For more information on the design of the cable ends, see page 11 to 13.

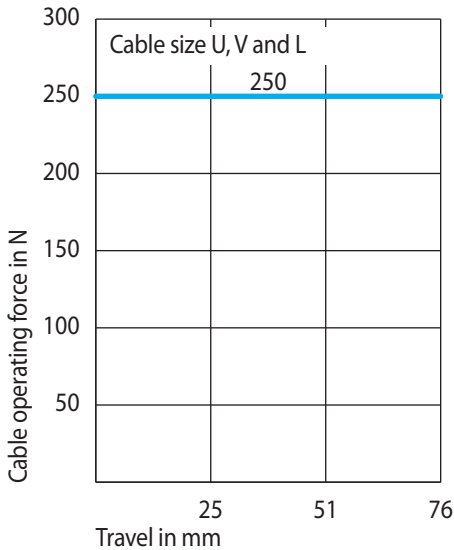
Push force series 283 and 275



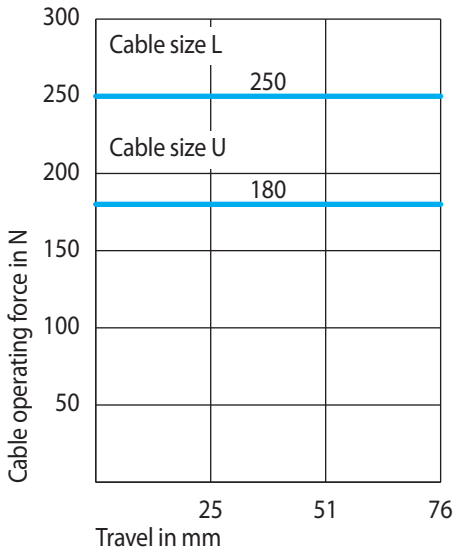
Push force series 775



Pull force series 283 and 275

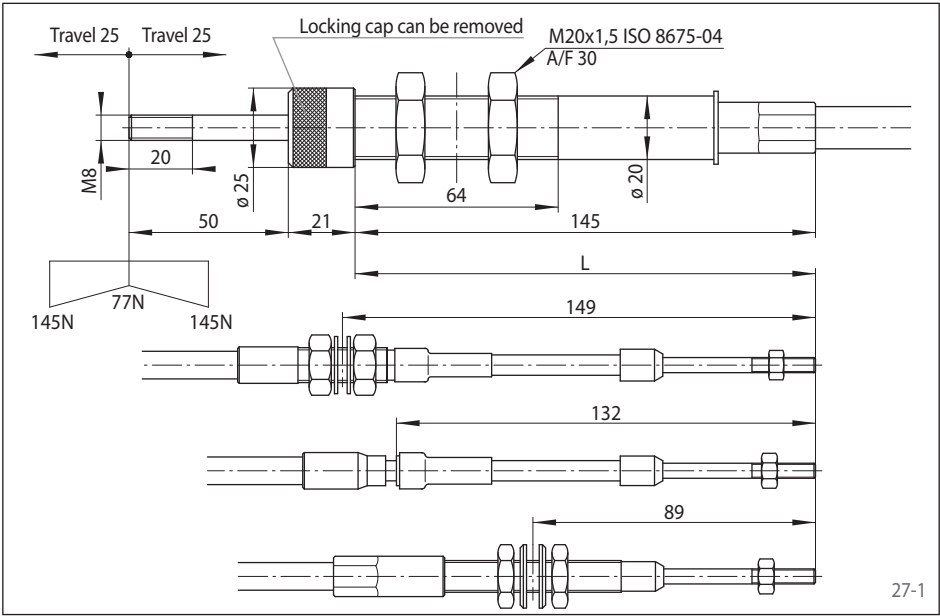


Pull force series 775



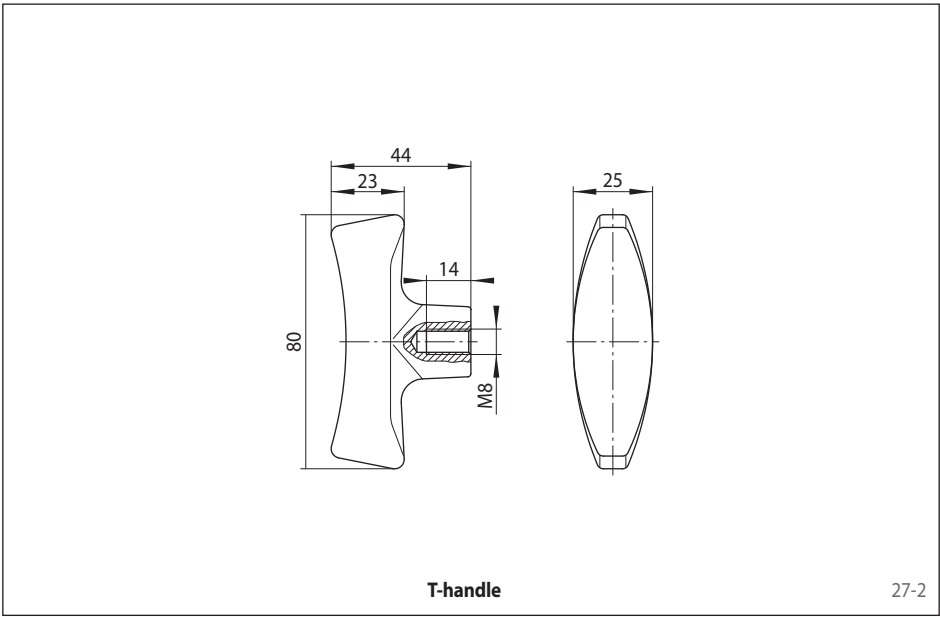
# Spring loaded control cable – VC –

Hand operated with spring return  
T-handle optional



## Features

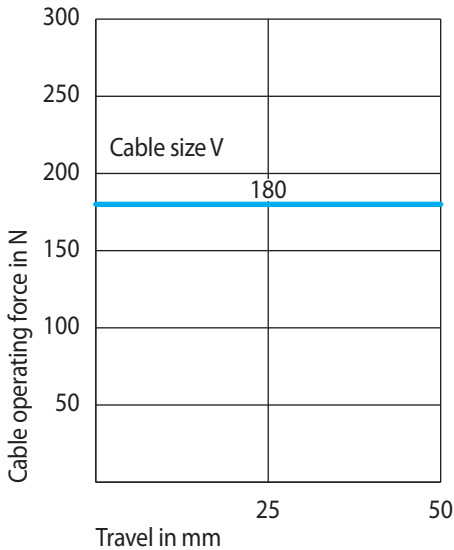
- Hand operated with spring return
- Return in 1/2 travel



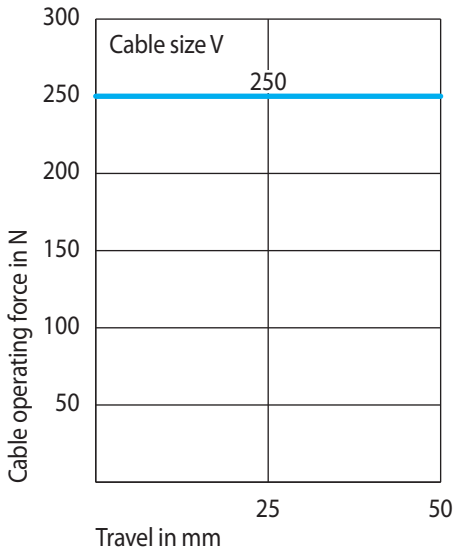
## Accessories

T-handle is not included in the scope of delivery for the cable.

Push force series 283 and 275

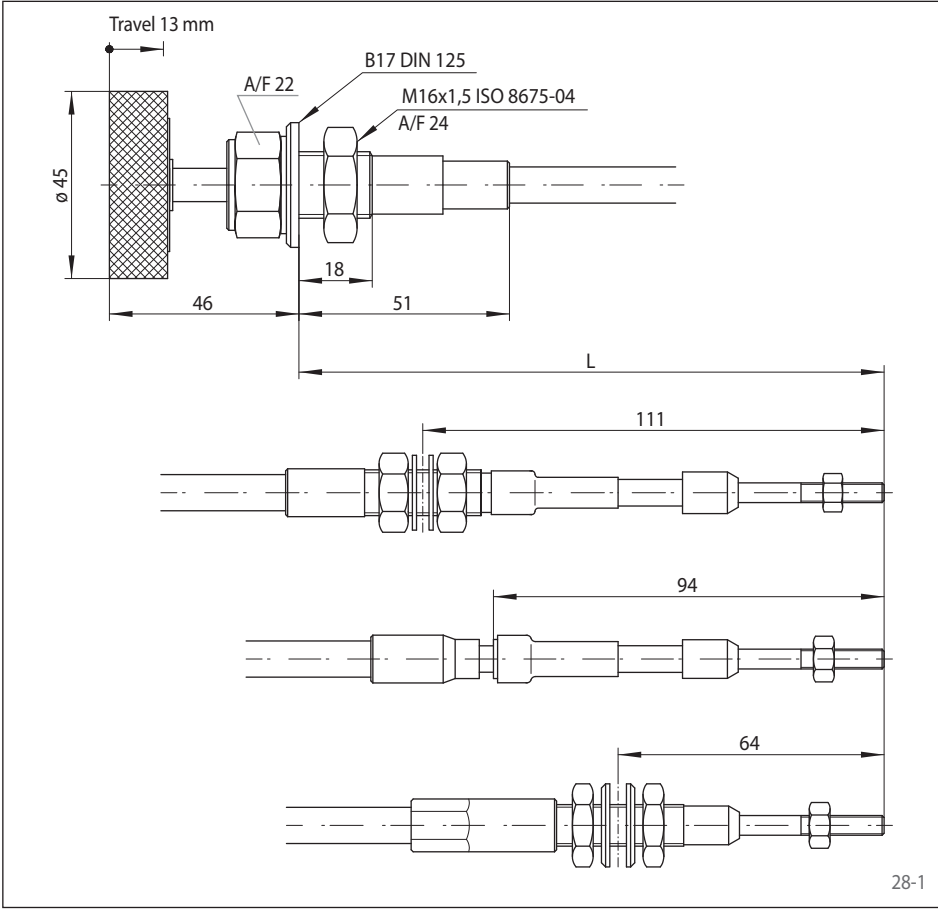


Pull force series 283 and 275



# Foot operated cable – VFC –

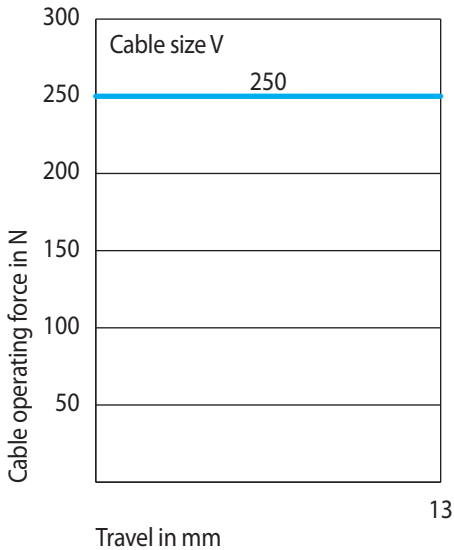
## Button with rubber cap

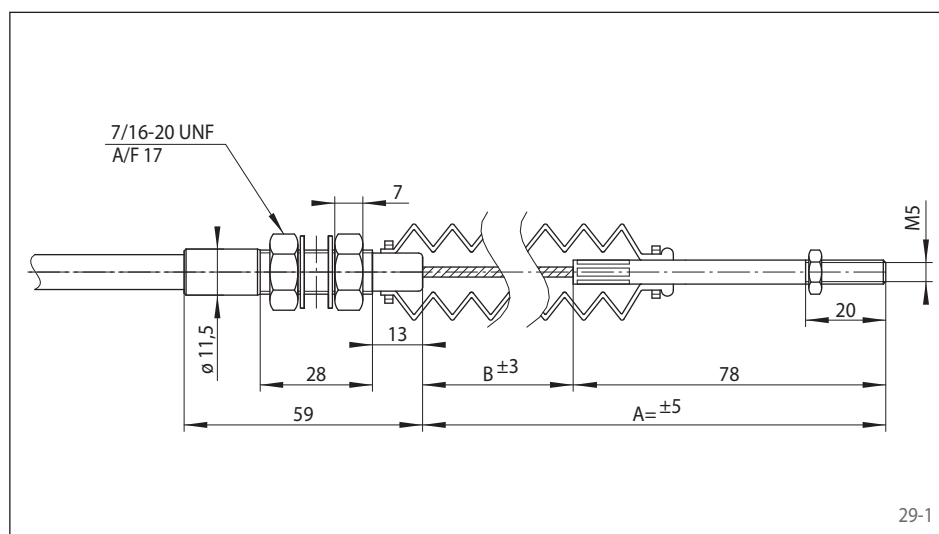


**Features**

Especially suitable for switching on additional functions, e.g. emergency off button or diesel stop. Function travel: 13 mm, only pressure. Return not carried out automatically, the operated element must have a spring return! The foot-operated button with a profile rubber cap is pivoted to ensure the cable is robust and durable.

Push force series 283 and 275



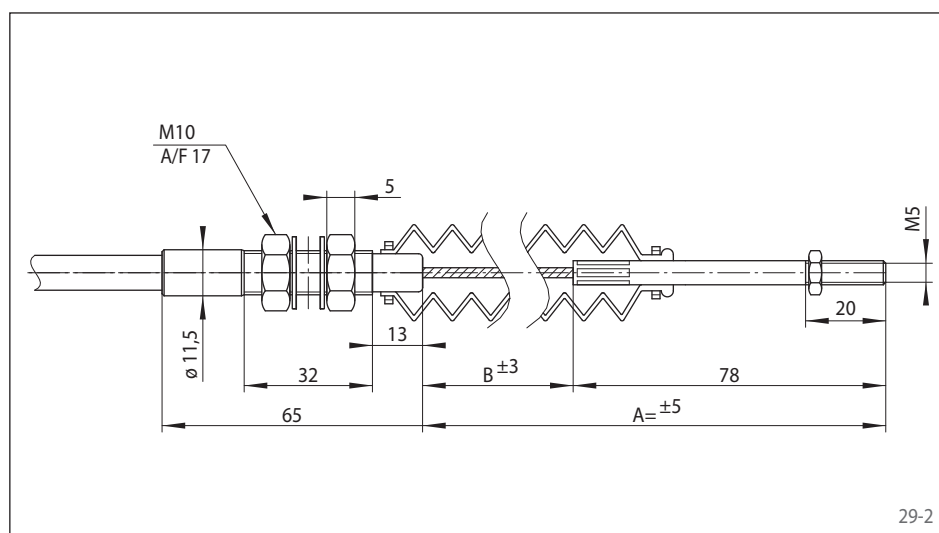


**Cable series 283 and 275**

**for cable size U**

**Type T00M**

Cable end with bulkhead endfitting 7/16-20 UNF, rod end M5 and a bellow

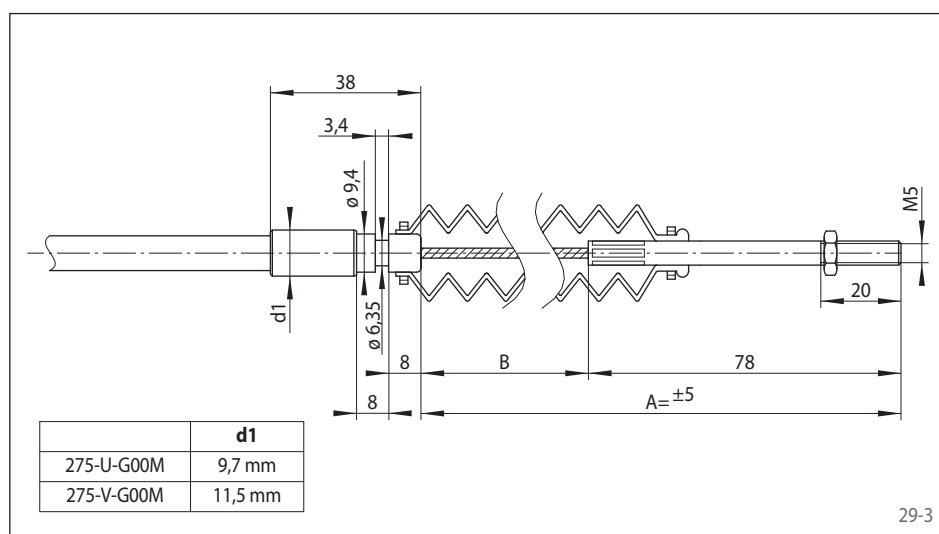


**Cable series 275**

**Cable size V**

**Type T00M**

Cable end with bulkhead endfitting M10, rod end M5 and a bellow



**Cable series 275**

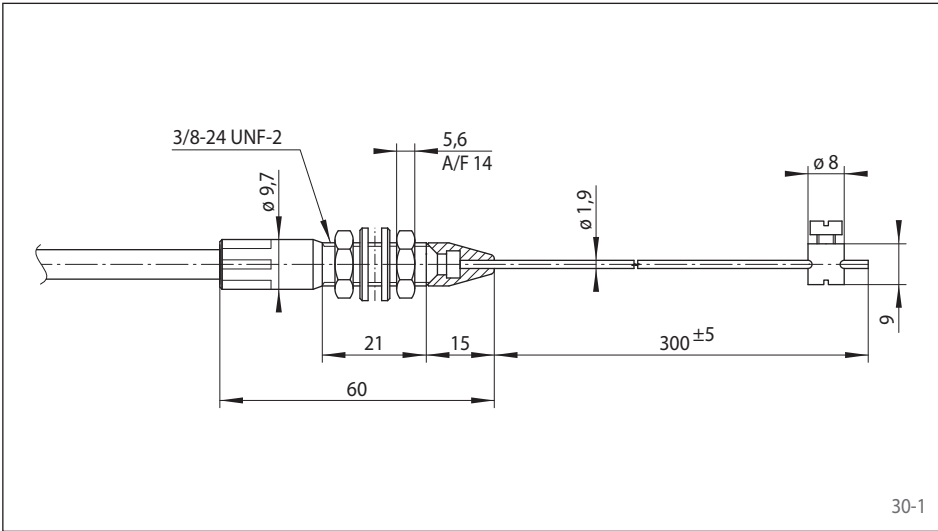
**Cable sizes U/V**

**Type G00M**

Clamp endfitting with rod end M5 and a bellow

### Remarks

- Dimension A with an inserted function button,  $A = B + 78$
- Sealing with optional bellow,  $B \text{ (min)} = 70$ ,  $B \text{ (max)} = 150$
- Dimension B is not included in the type designation and must be specified additionally
- Other versions are available upon request

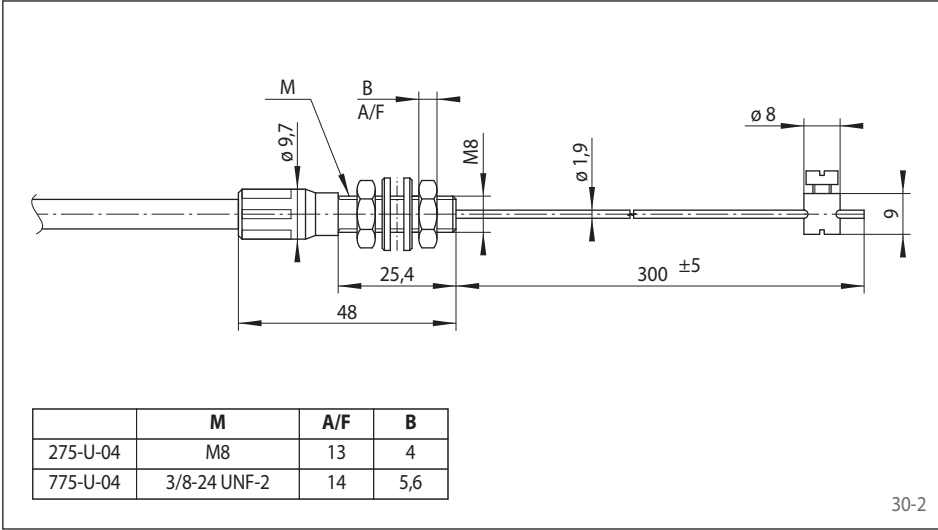


Cable series 775

Cable size U

Type 03

Open cable end with bulkhead endfitting 3/8-24 UNF-2, sealing and screw nipple

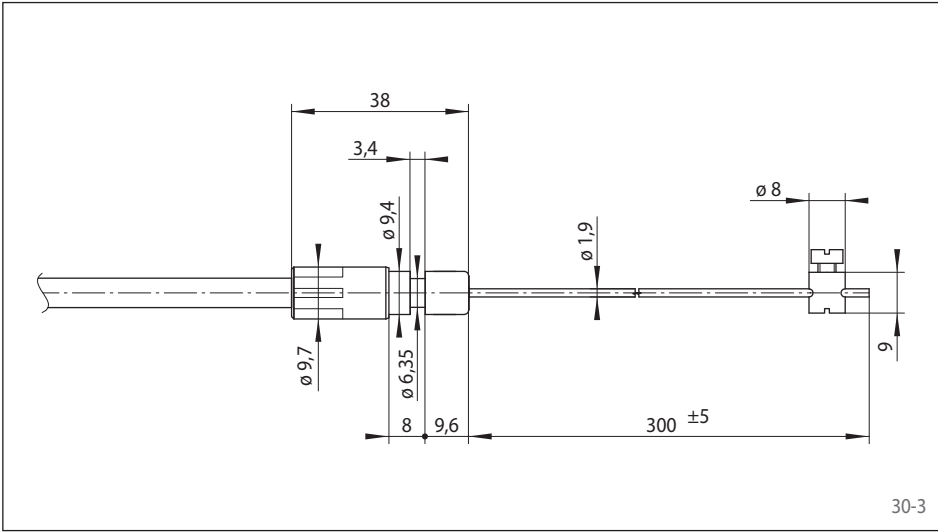


Cable series 275 and 775

Cable size U

Type 04

Open cable end with bulkhead endfitting M8 or 3/8-24 UNF-2 and screw nipple



Cable series 775

Cable size U

Type G00

Open cable end with a clamp endfitting and screw nipple

Remarks

- Dimension 300 with inserted function button
- Other versions are available upon request

# Order key for push/pull cables with control heads



**Features**

**Order code:** 283 - V - TL / T 05 M - 3 - 0200

**Cable serie:**

283, 275, 775 or other after consultation

**Cable size:**

Selection according to operating forces,  
connection threads, bend radii etc.:  
U, V or L

**Control head:**

According to operation

**Connection second end part:**

In accordance with installation conditions T, G, S or R

**Wiper seal:**

Only for cable end parts T, G, S or R  
(See catalogue page 10)

**Thread at rod end:**

Only at end parts T, G, S or R  
M for metric,  
Z for inch (UNF) thread

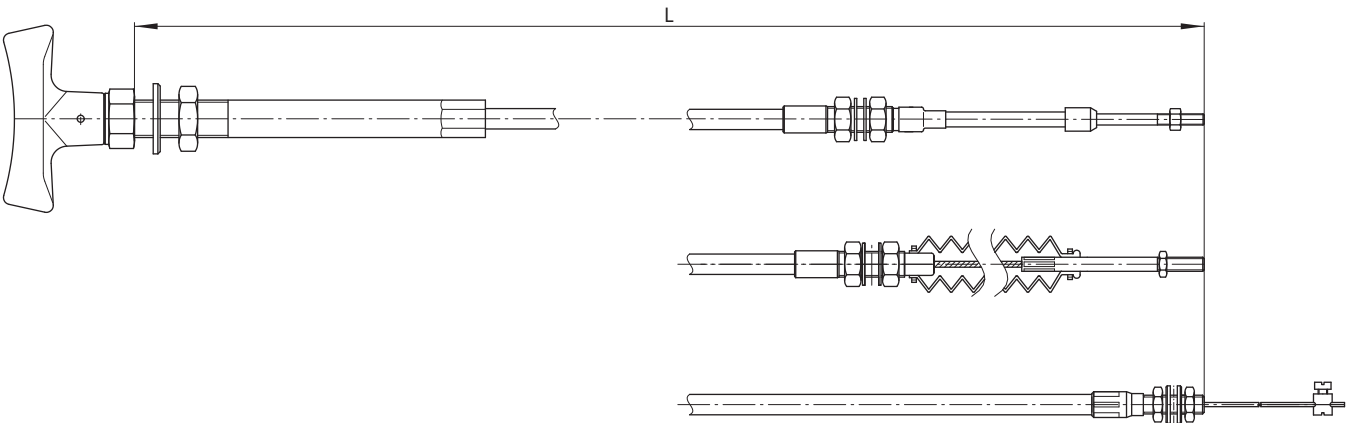
**Travel code:**

The following values are possible as travel code,  
in compliance with a travel in mm:

<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>
25	51	76	102	127	152

**Cable length:**

Entire length, denoted in cm,  
principally 4-figure:  
e. g.: 3 400 mm = -0340  
e. g.: 5 m = -0500





32-1

Features

- Sensitive adjustment
- With friction
- For highly flexibly push/pull cables

Cable size U, travel code 2

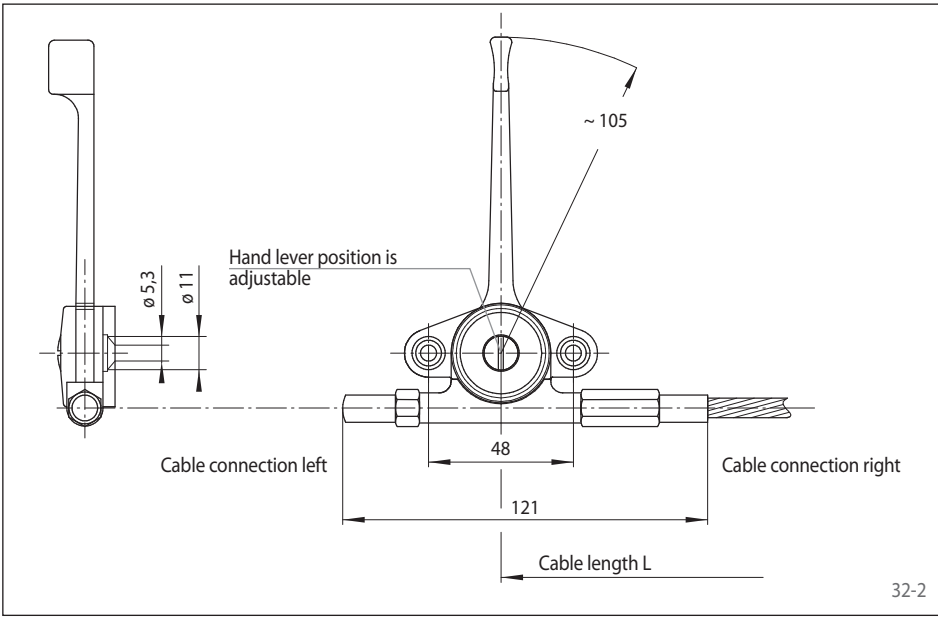
This control lever offers with its long operating lever and the fine tunable friction the best pre-requisite for sensitive adjustments, such as speed regulation of motors/hand throttle; with RCS® push/pull cables size U.

Maximum loads on the cable

Cable size U:	80 N
Maximum holding force:	50 N
Travel of the cable:	48 mm
Lever transmission:	1:6
Lever swiveling angle:	170°

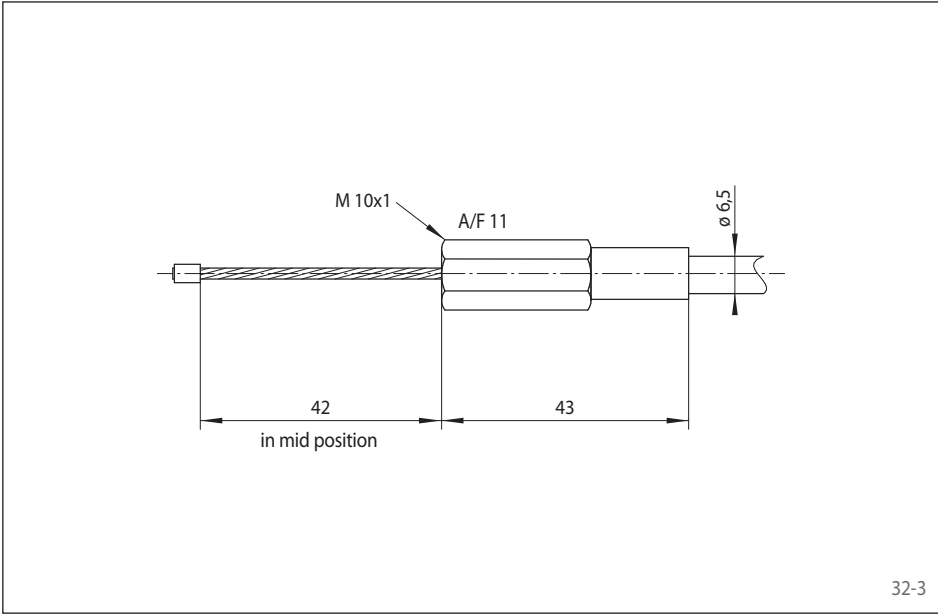
Art.-No.:	Cable connection:
4561-002001-000000	left
4561-002002-000000	right

For more information on the design of the cable ends, see page 11 to 13.



32-2

Cable end MGD for connection to control lever 14 RN 15



32-3





33-1

Features

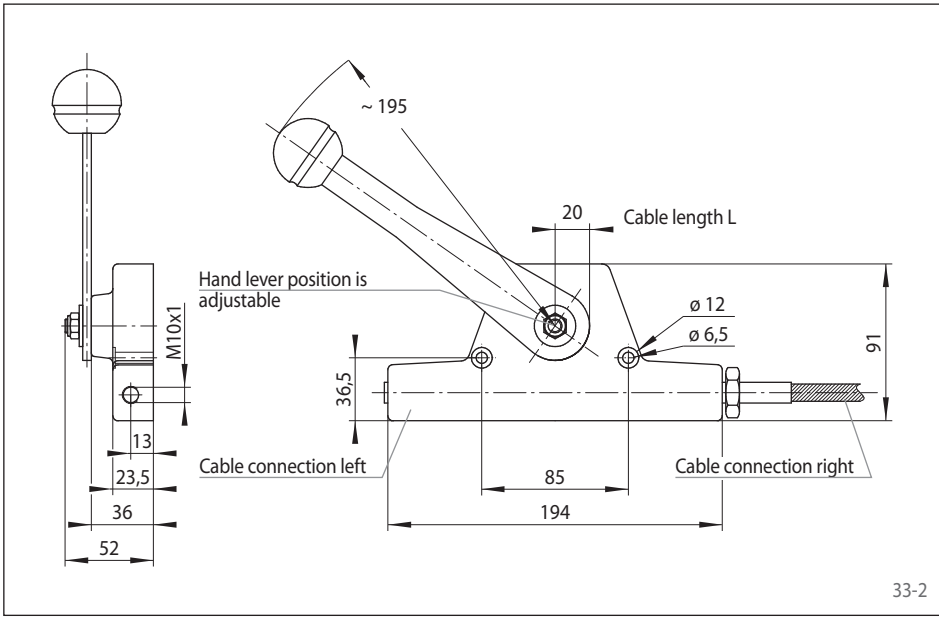
- Adjustable friction
- Robust design
- Suitable for raw operation
- Connection for push/pull cables

Cable size V or L, travel code 3

The 58.5 and 58.3 series (with a catch in medium position) are equipped for adjustable friction and are suitable for their robust construction for mechanical remote adjustments also under raw operating conditions.

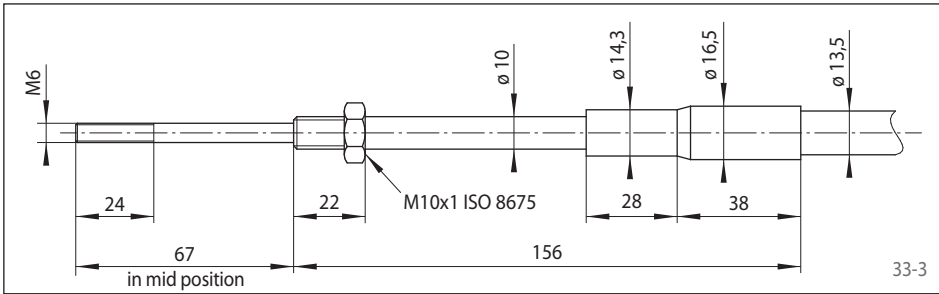
Maximum loads on the cable

Cable size V:	300 N
Cable size L:	500 N
Maximum holding force:	200 N
Travel of the cable:	76 mm
Lever transmission:	1:6
Lever swiveling angle:	170°



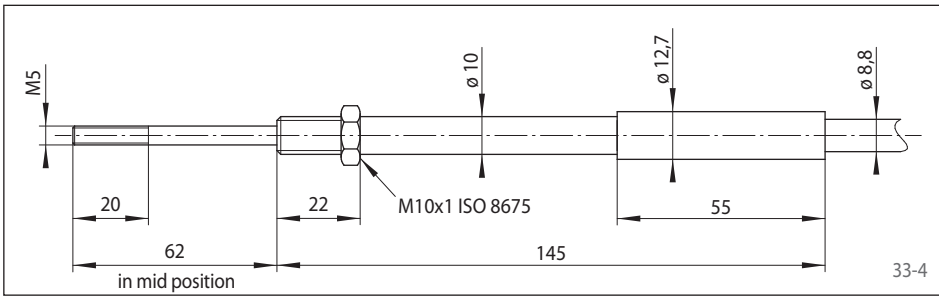
33-2

Cable end MGD size L for connection to control lever 58.5 and 58.3



33-3

Cable end MGD size V for connection to control lever 58.5 and 58.3



33-4



- Sensitive regulation
- With friction (adjustable)
- Travel 80 mm
- For push/pull cables 275-V and pull only cable 278-V

Cable size 275/278-V:	500 N pull
Cable size 275-V:	50 N push
Maximum holding force:	250 N
Travel of the cable:	80 mm
Lever transmission:	1:4,4
Lever swiveling angle:	156°
Art.-No.:	4561-0022

34-2

## 34-3



35-1

### Features

- Sensitive regulation
- With locking and friction (adjustable)
- Travel 80 mm
- For push/pull cables 275-V and pull only cable 278-V

### Maximum loads on the cable

Cable size 275/278-V: 500 N pull

Cable size 275-V: 50 N push

Maximum stopping force: 250 N

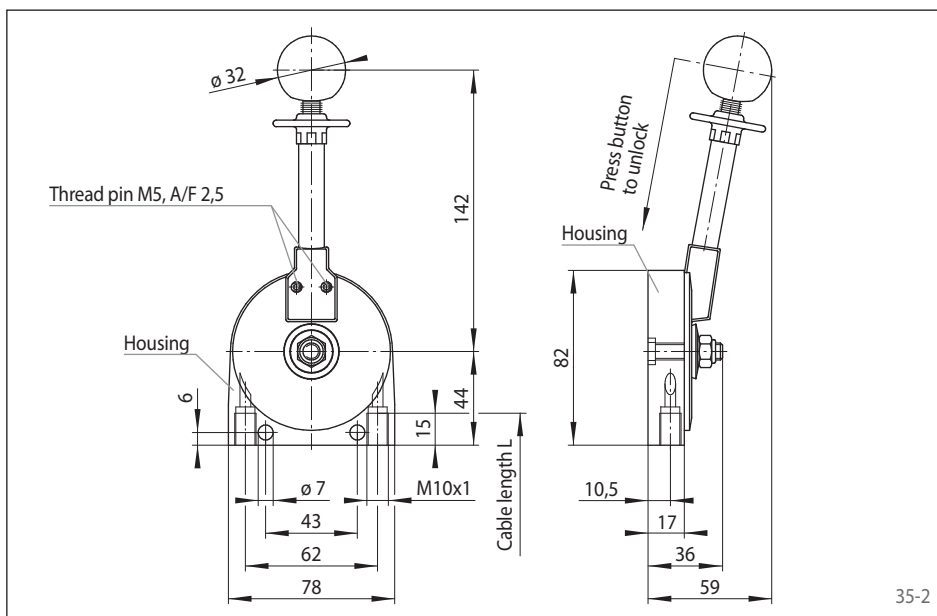
Travel at the cable: 80 mm

Lever transmission: 1:4,8

Lever swiveling angle: 156°

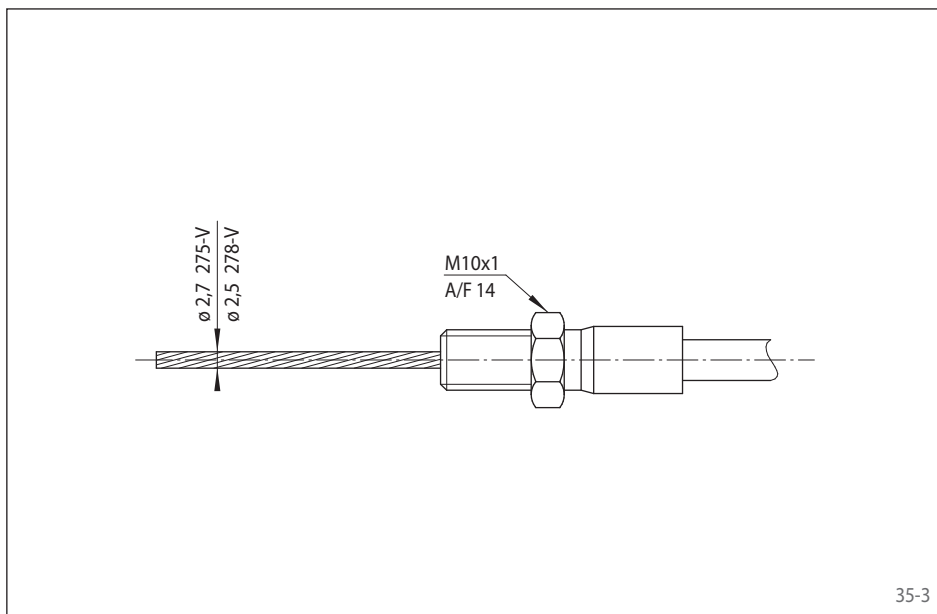
Art.-No.: 4561-002223

For more information on the design of the cable ends, see page 11 to 13, as well as page 39.



35-2

### Cable end MGS for connection to friction control 22.3



35-3



36-1

### Features

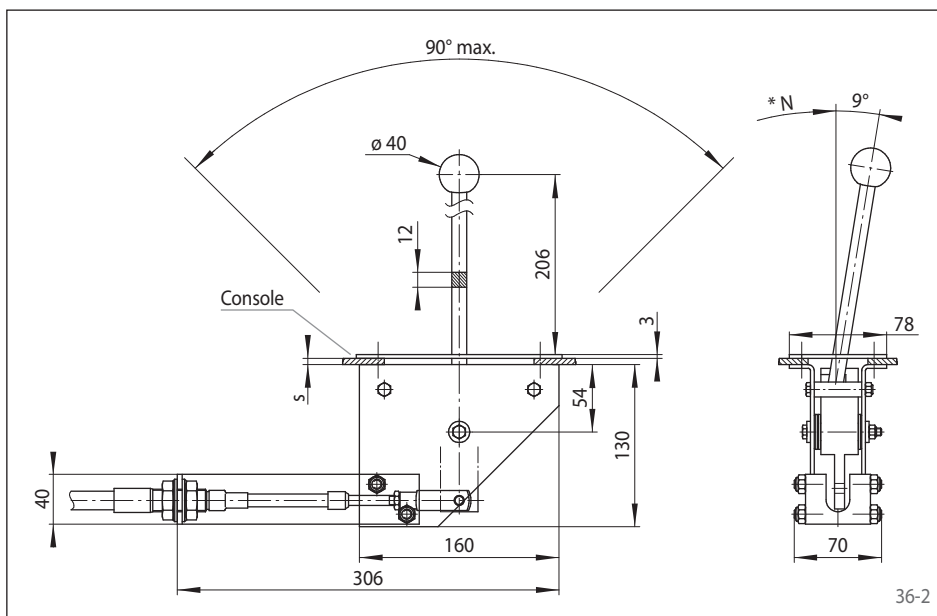
- For two switch positions
- With a lock in both end positions
- For cable size M, travel 60 mm

Variable application due to costumers specifi-able gate plate. The input lever is locked via the gate plate.

Travel standard version:

60 mm, at console  $s = 4$  mm

Can be used e.g. for gear switching on asphalt road finishers or flap adjustment in the aviation sector. In particular safety requirements are fulfilled for the locking of the end positions.



36-2

Cable series: 775/275/283

Cable size: M

Connection: T

Travel code: 3

F max.: 950 N

Lever transmission: 1:4,8

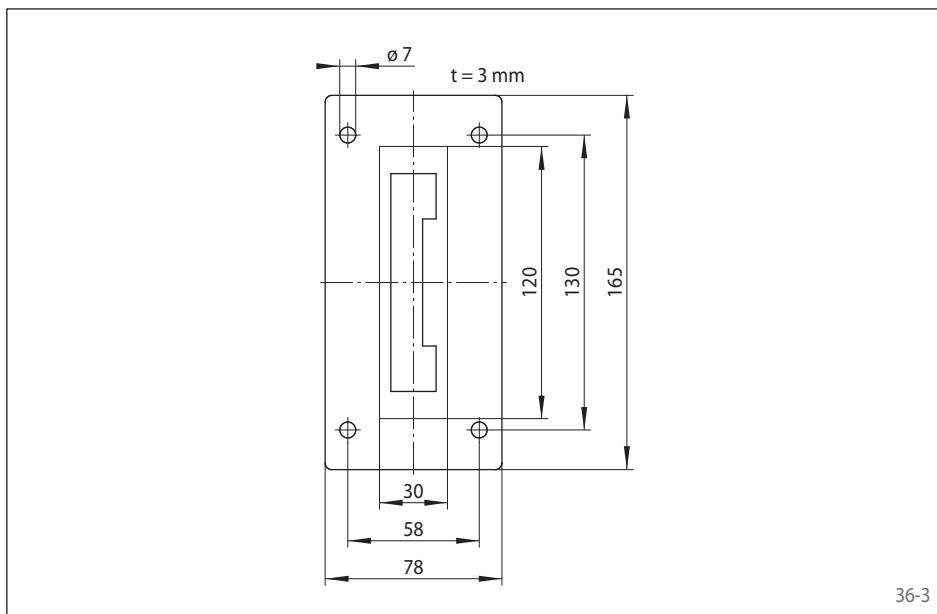
Section in console for standard splitter: 120 x 30 mm

Art.-No.: 4564-010039

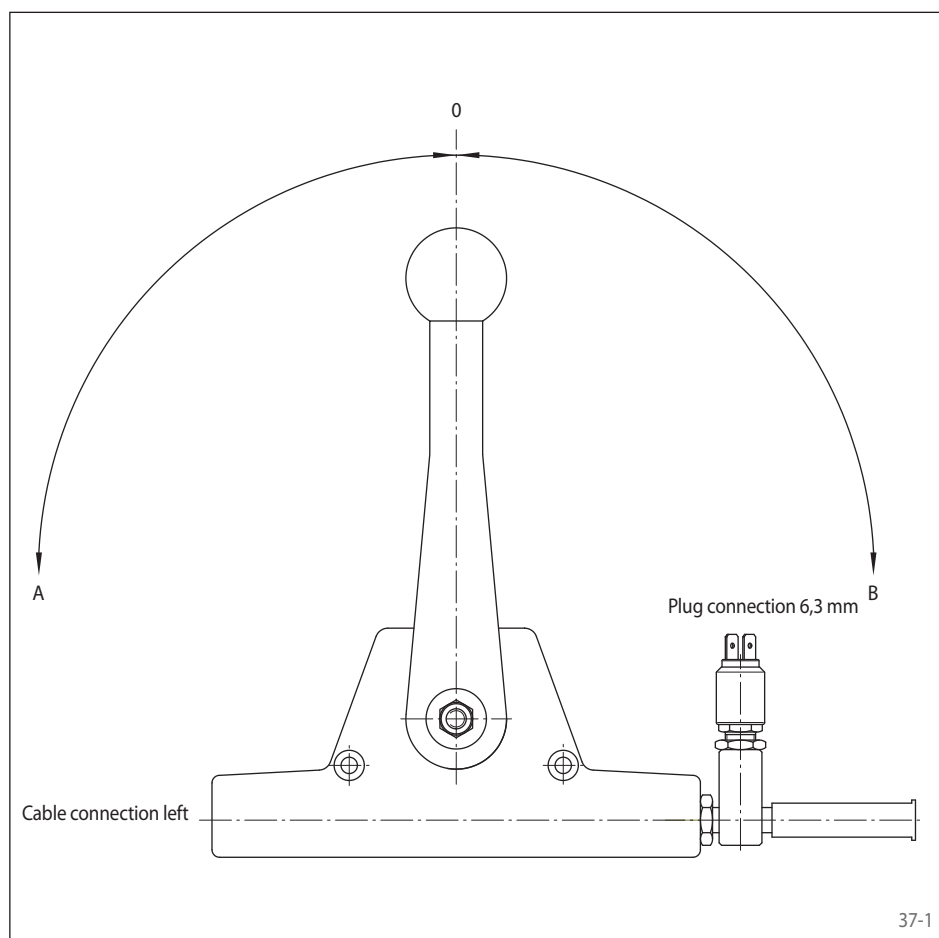
Robust steel sheet construction, zinc-coated.

Large dimensioned bearing positions, maintenance-free, for long service life and high operating safety.

\* Hand lever springs against N.



36-3



## Electric switch for control lever 58.x

The 58.x series control levers can be equipped with an electric switch, which is operated independently of travel by a rod and additional electric functions such as reversing light, warning and safety switches and electrical auxiliary units.

### Travel adjustment

0 -> A cable pulls

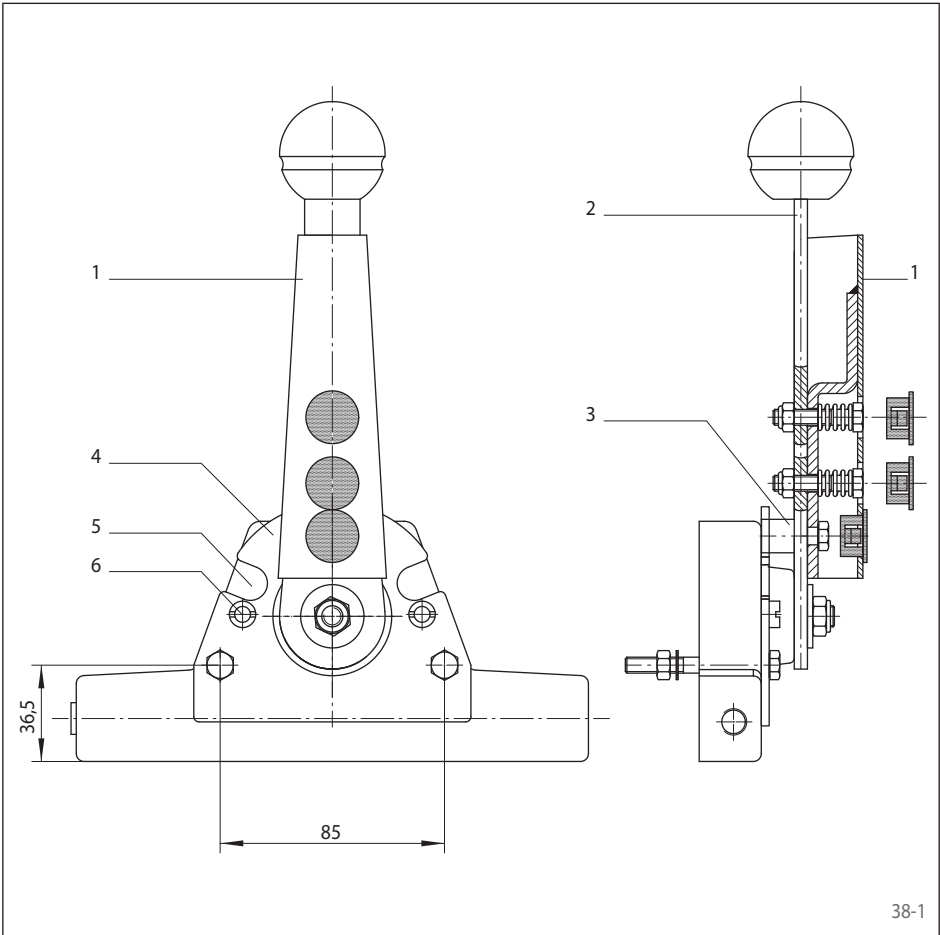
0 -> B cable pushes

In positions 0 -> A the switch contact is open.

If the position 0 -> B is left, then the switch closes and remains closed.

Displayed is the cable connection left. When the cable connection is right, the functions are reversed.

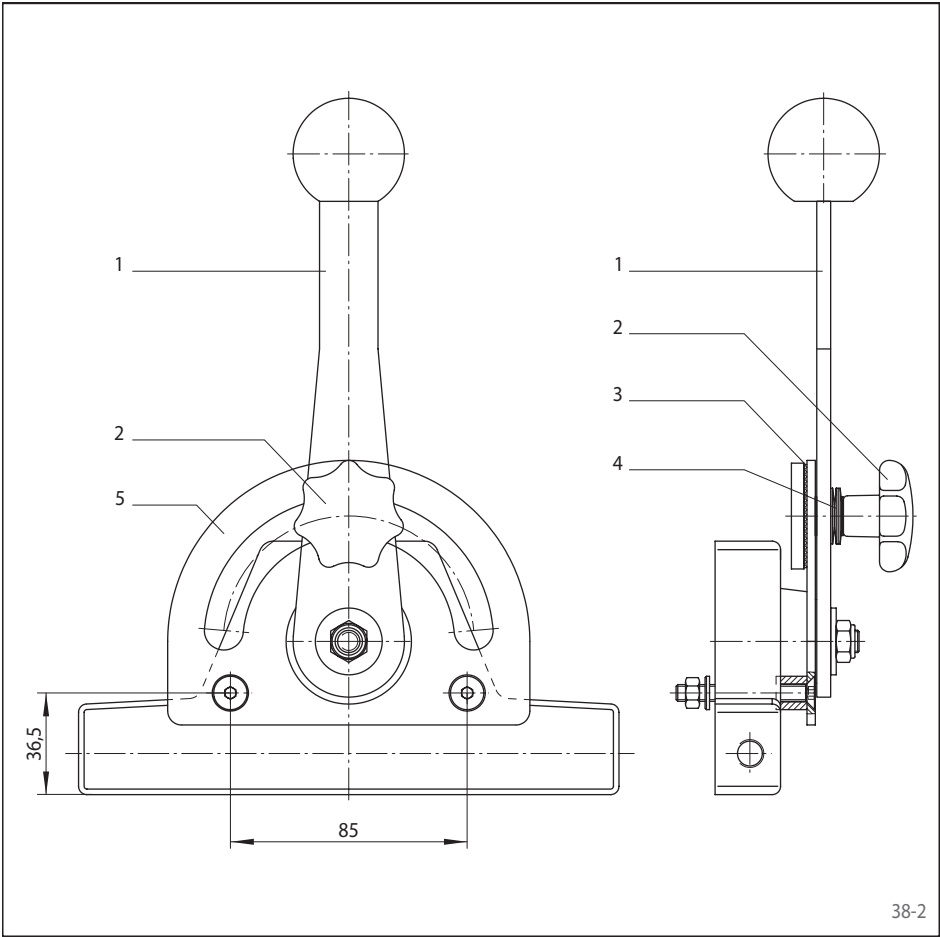
max. switch voltage:	12 V
max. switch current:	10 A
max. switch capacity:	120 W



**Lock for control lever 58.5**

The control lever 58.5 with an additional locking mechanism enables defined travel adjustments together with the maximum utilization of the holding force of 500 N (cable size L).

- 1 Unlocking mechanism, spring loaded
- 2 Hand lever, modified
- 3 Locking bolt, hardened
- 4 Locking disc, hardened
- 5 Notches manufactured according to customer specifications
- 6 Travel limiting (optional)

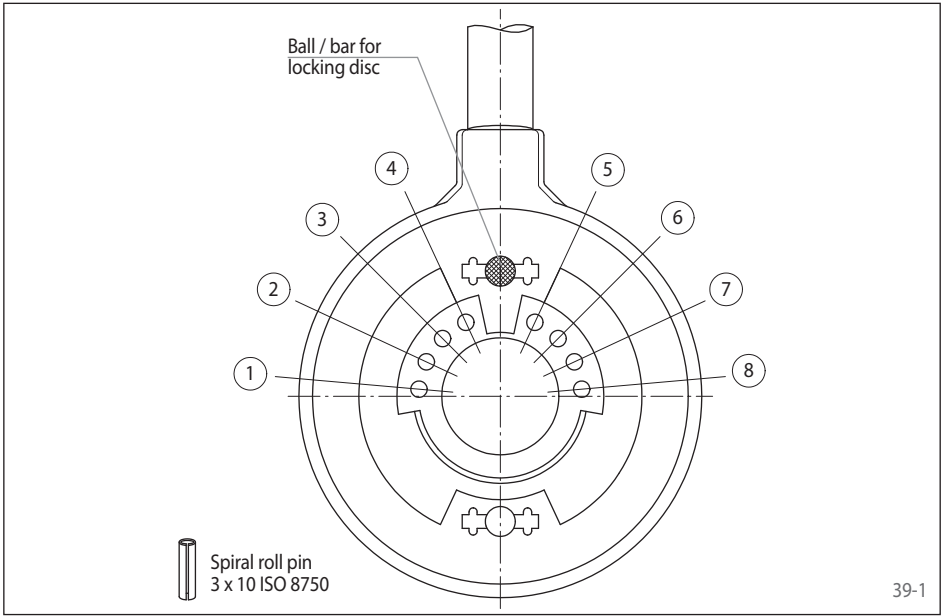


**Parking brake for control lever 58.5**

The control lever 58.5 with additional adjustable parking brake enables the sensitive continuous travel adjustment up to the maximum holding force of 500 N (cable size L).

- 1 Hand lever, modified
- 2 Star handle
- 3 Friction lining
- 4 Plate springs
- 5 Friction disc
- Travel limiting (optional)

Art.-No.:	Lever with parking brake, cable connection:
4561-002319-000000	Type 58.5, left V / right L
4561-002320-000000	Type 58.5, left L / right V



Features

- Traversable ball catch(es) for 22.1 with ball and locking disc or
- Locking for 22.3 with a bar and locking disc
- Travel limiting using clamping cap(s)
- Adjustable friction

Ball catching/locking:

Clear catching/locking of the hand lever in the locking position of the disc.

Standard locking position at  
36° = 12 mm travel  
60° = 24,5 mm travel

Disk can be installed for cable connection on both right and left sides.

Travel limiting:

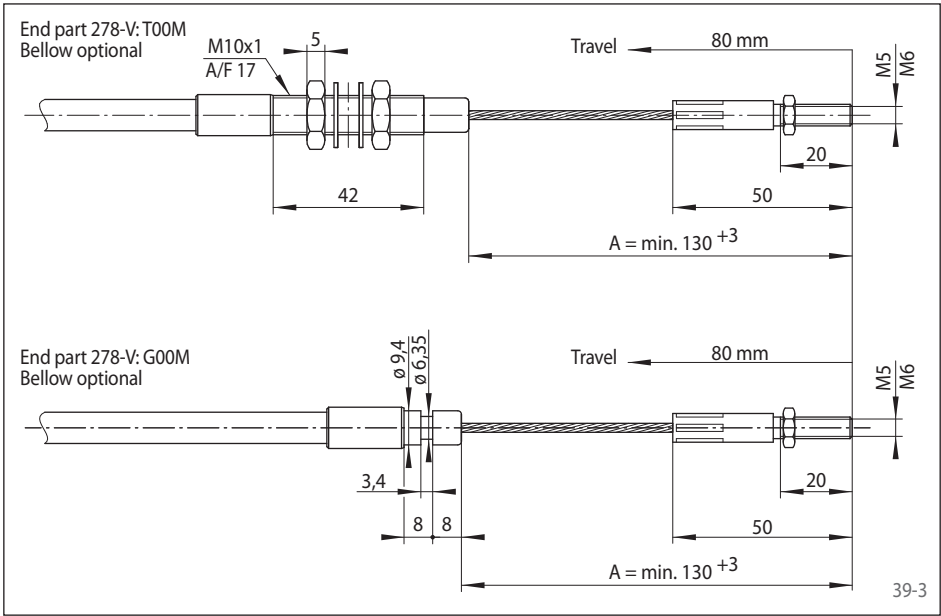
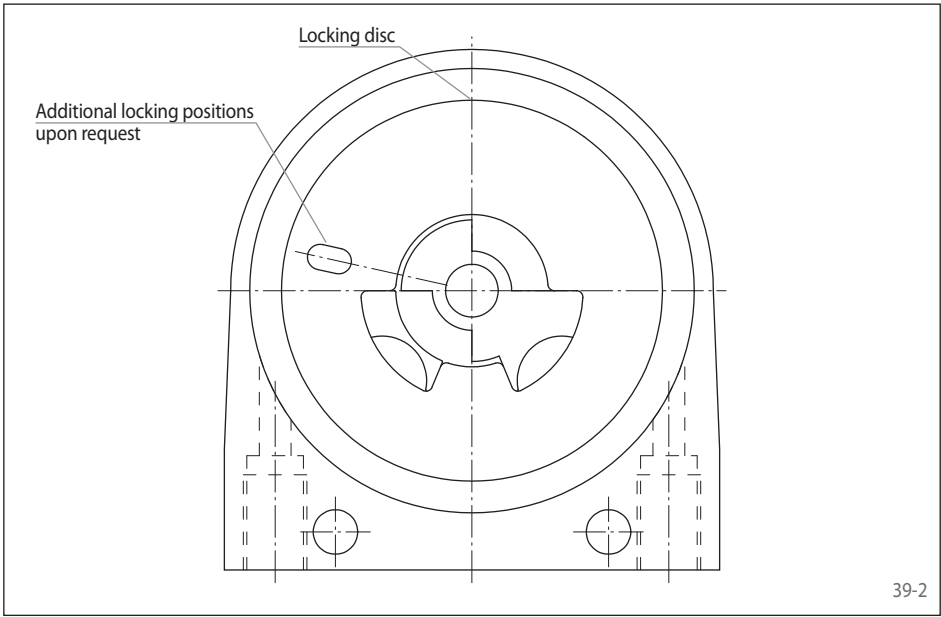
The travel can be reduced using the spiral roll pin by 10/20 mm respectively.

Symmetrical or asymmetrical reduction is possible.

Example:

Pin in	Travel	Travel position
① or ⑧	40 mm	asymmetrical
② or ⑦	50 mm	asymmetrical
③ or ⑥	60 mm	asymmetrical
④ or ⑤	70 mm	asymmetrical
④ + ⑤	60 mm	symmetrical
③ + ⑥	40 mm	symmetrical

For more information on the design of the cable ends, see page 11 to 13.



Open ends

- Pulling strands made from stainless steel
- Sealing available with optional bellow

# Order key for push/pull cables for control lever systems

Features

Order code: 283 - U - MGD / T 05 M - 3 - 0200

Cable series:

283, 275, 278, 775 and 778

Cable size:

Selection according to operating forces,  
connection threads, bend radii etc.:  
U, V or L

Cable connection to lever:

Cable output side:

In accordance with installation conditions T, G, S, R, 03, 04 or 08

Wiper seal:

See catalogue page 10

Thread at rod end:

M for metric,  
Z for inch (UNF) thread

Travel code:

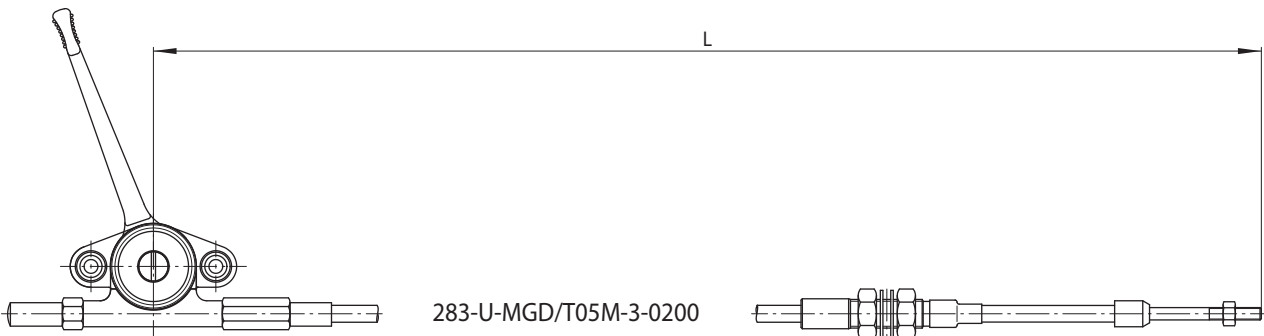
The following values are possible as travel code,  
in compliance with a travel in mm:

Type	Travel code	Travel
14 RN 15	2	48 mm
58.x	3	76 mm
22.x	3	80 mm

Cable length:

Entire length, denoted in cm,  
principally 4-figure:  
e. g.: 3 400 mm = -0340  
e. g.: 5 m = -0500

Correct spelling:









42-1

The development of this throttle operation is unique, because the throttle cable is fully integrated into the pedal.

That means:

- The throttle cable is operated from inside the pedal
- No additional spatial requirement underneath the vehicle or the cabin floor
- No large breakthroughs necessary, only a simple hole pattern for 3 screws and the sealing plugs

## Features

### Pedal:

- Pedal angle continuously adjustable
- Robust steel sheet metal design, corrosion protected by black surface treatment
- Slip-proof pedal rubber on the tread surface

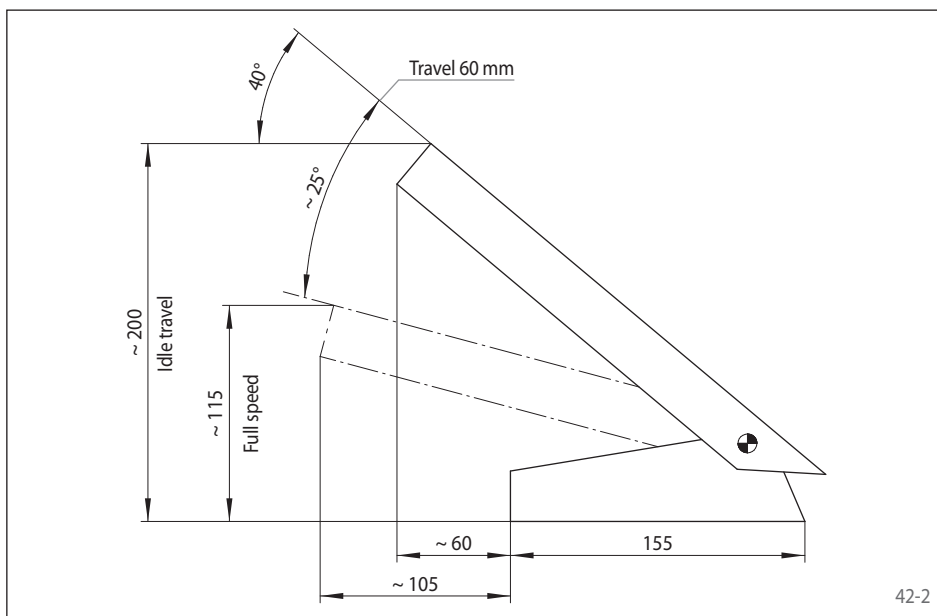
### Cable:

- Smooth operating throttle cable with high efficiency, particularly suitable also for large lengths
- Optimal assembly thanks to small bend radius of min. 51 mm
- Pulling loads of max. 450 N
- Can be employed at temperatures from -50 °C to +90 °C (short term +150 °C)
- Throttle cable travel can be adjusted continuously between 20 mm - 60 mm

### General information:

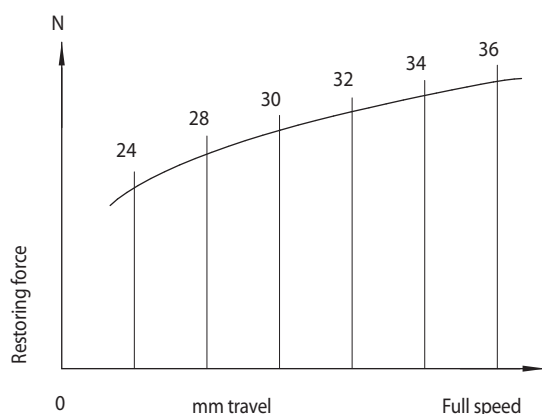
- A variety of end part variations for connection to the engine
- System-oriented accessories range
- Available for higher temperature upon request

Art.-No.: 4569-000023



42-2

## Restoring force



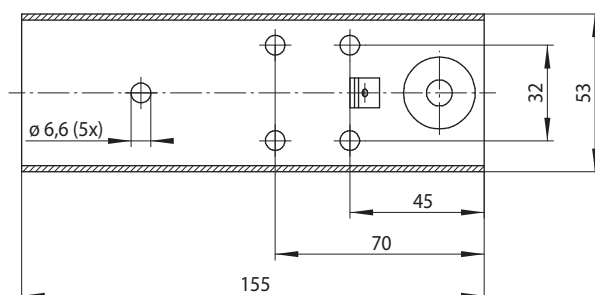
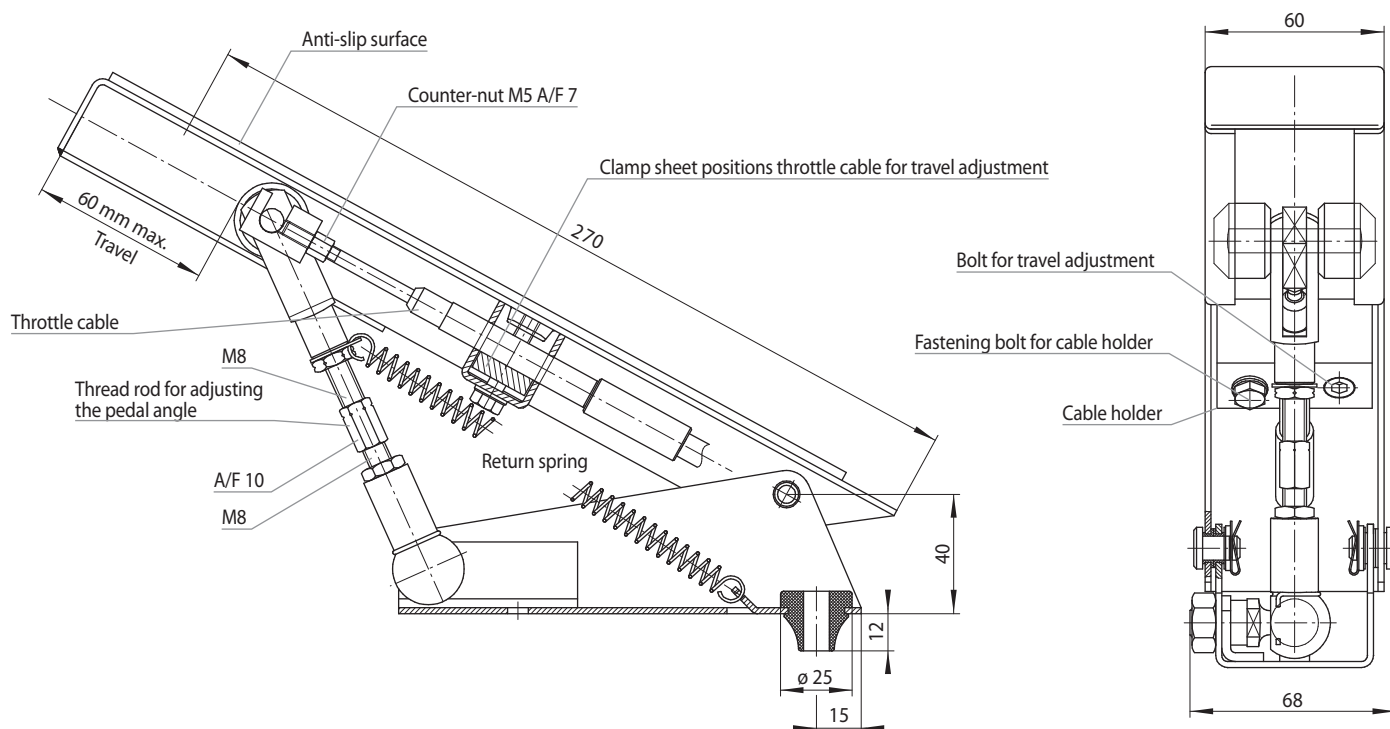
42-3

# Throttle pedals

for pull only cable 283-U-GAS/... and 283-V-GAS/...

**RINGSPANN®**

**RCS**

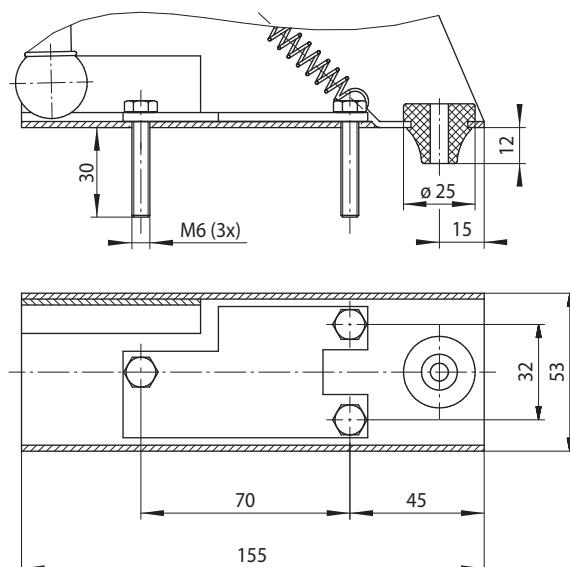


43-1

## Assembly plate

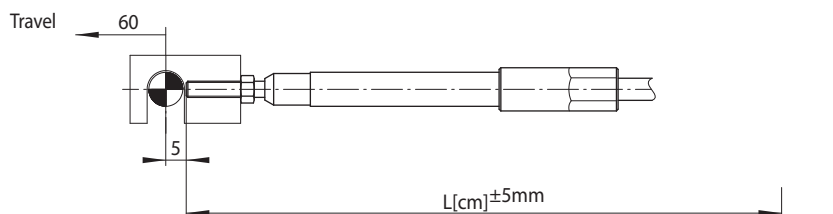
For easy screwing through the vehicle floor.

Art.-No.: 3570-000014

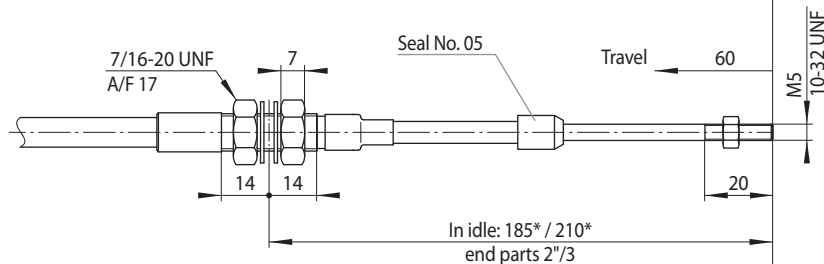


43-2

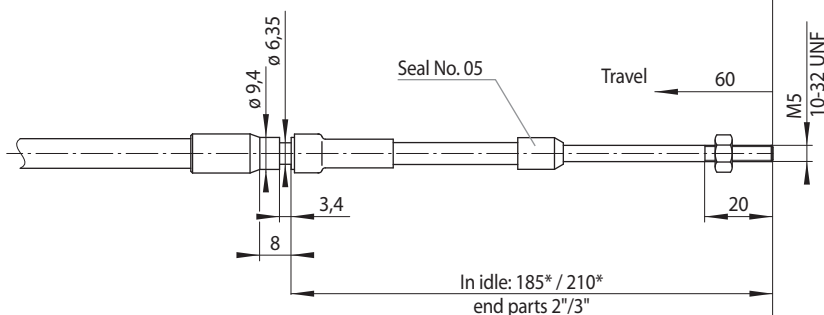
### Pedal connection GAS:



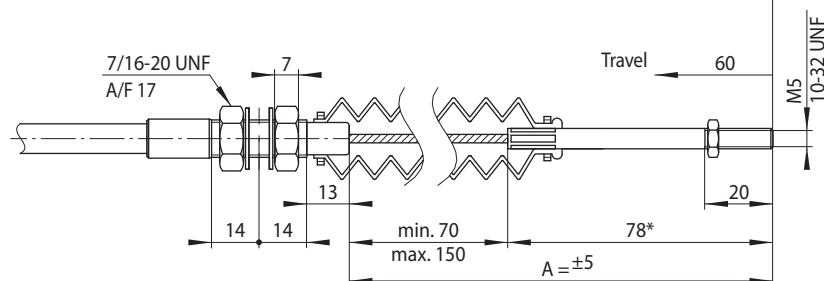
### Motor connection T05M:



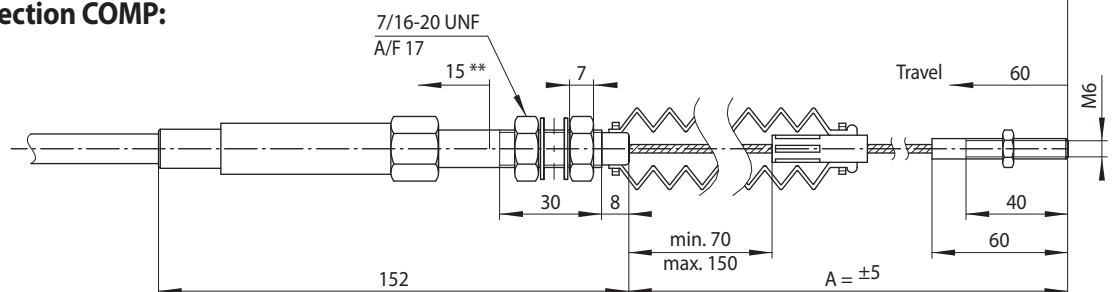
### Motor connection G05M:



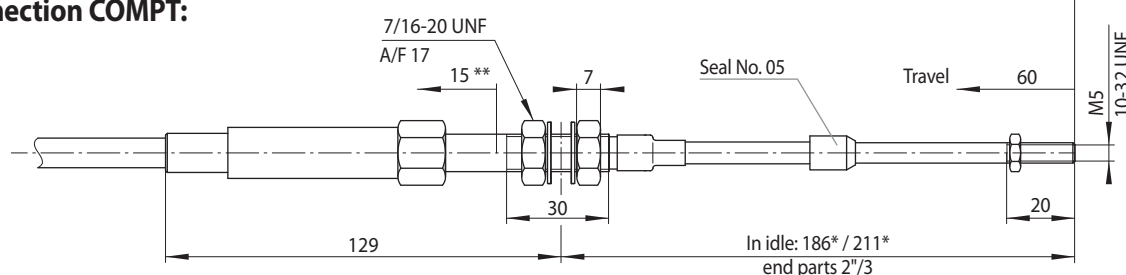
### Motor connection T00M:



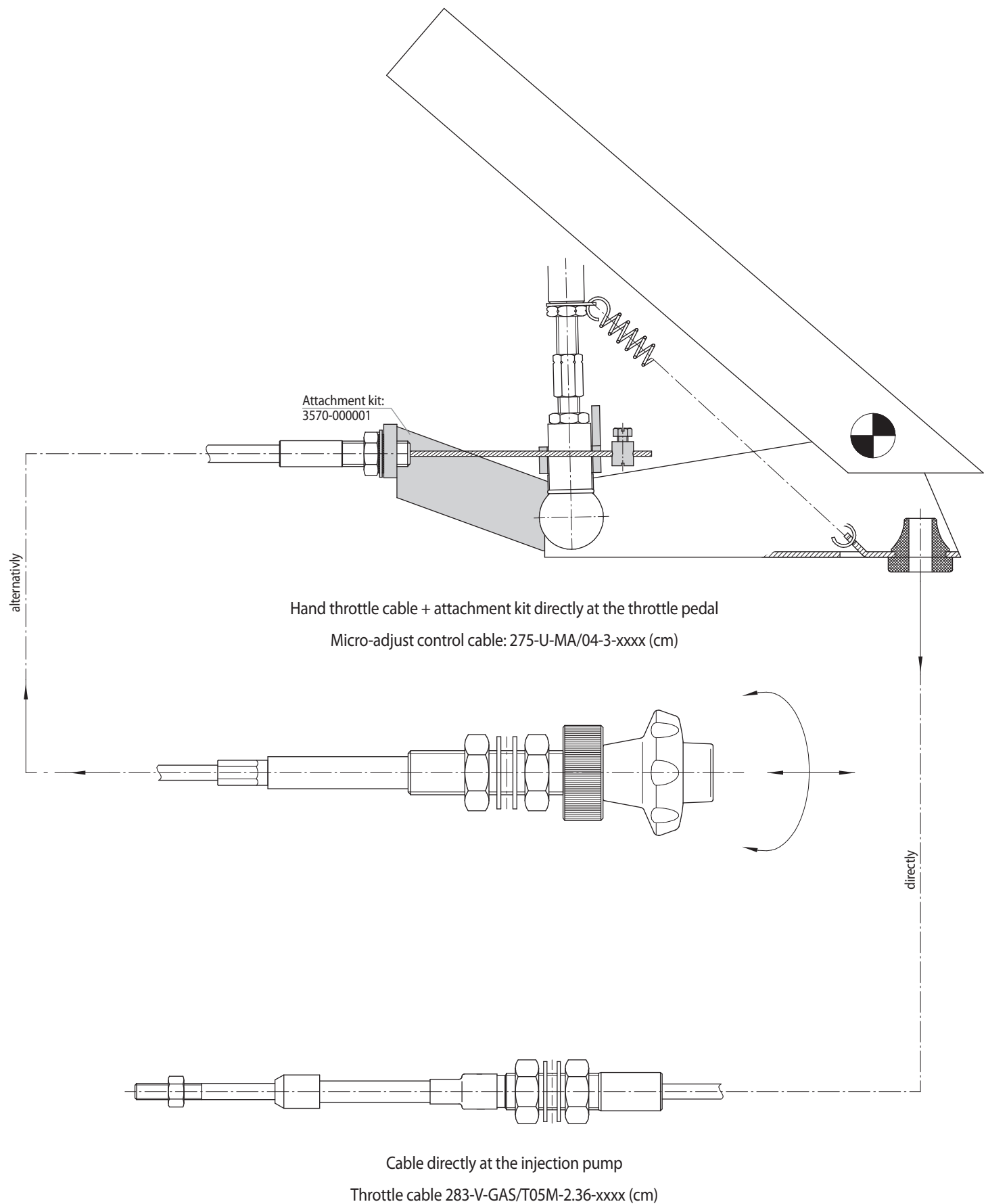
### Motor connection COMP:



### Motor connection COMPT:

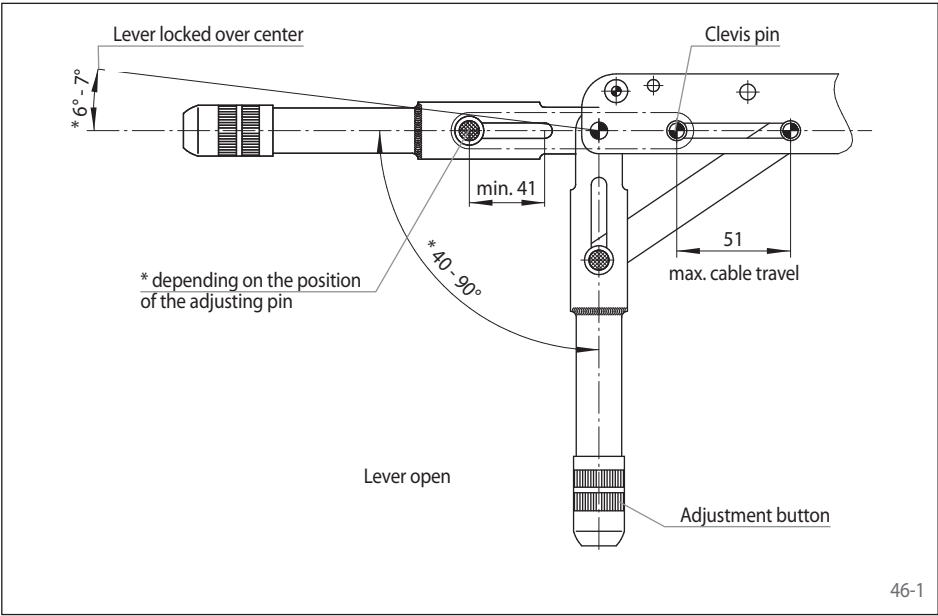


\* Other lengths, threads and motor connections available upon request • \*\* Compensated excess travel and exceeding the max. pull force



Over center locking

The hand lever rests only in two positions: CLOSED and OPEN without the use of ratchets, segments or other unlocking mechanisms. The brake activation is achieved by the simple turnover of the hand lever and secured over center locking.

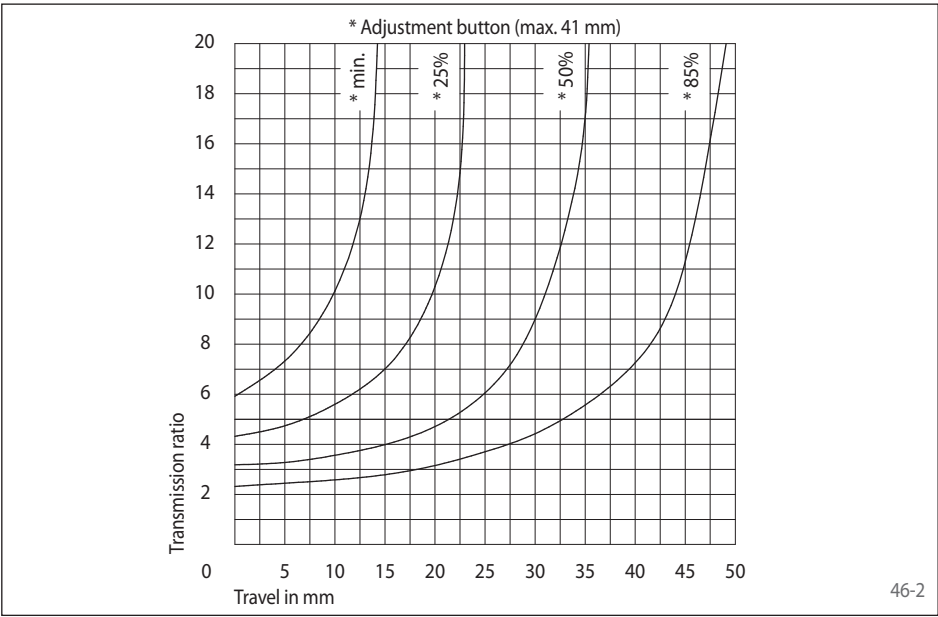


46-1

Transmission ratio

A brake cable system is elastic and not linear or rigid. When turning the hand lever, the available backlash, travel of a return spring at the brake and finally the elasticity of all components are rescinded.

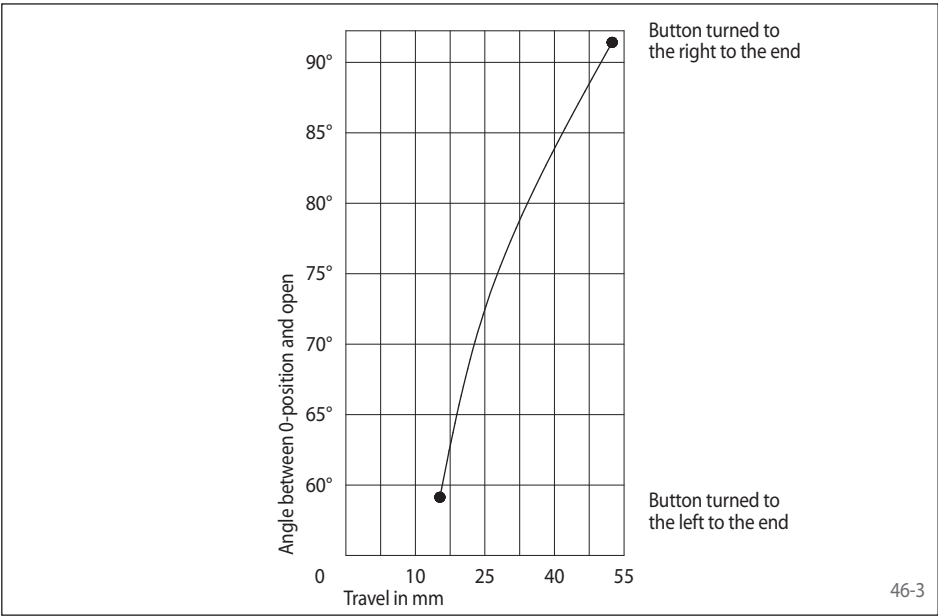
The transmission ratio is dependent on the position of the adjusting pins and the travel at the clevis pin, to be read in the curves depicted here.



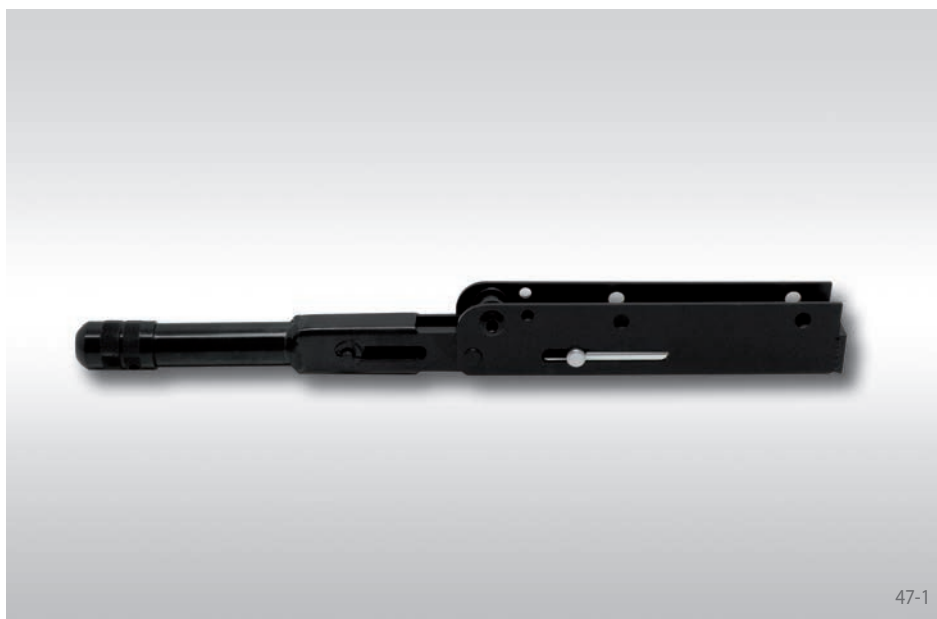
46-2

Adjustment

Backlash in the brake cable or wear of the brake can be compensated for up to a max. 41 mm using the ball-locking adjustment button. The angle of the hand lever from  $40^\circ$  to  $90^\circ$  is dependent on the position of the adjusting and clevis pins.



46-3



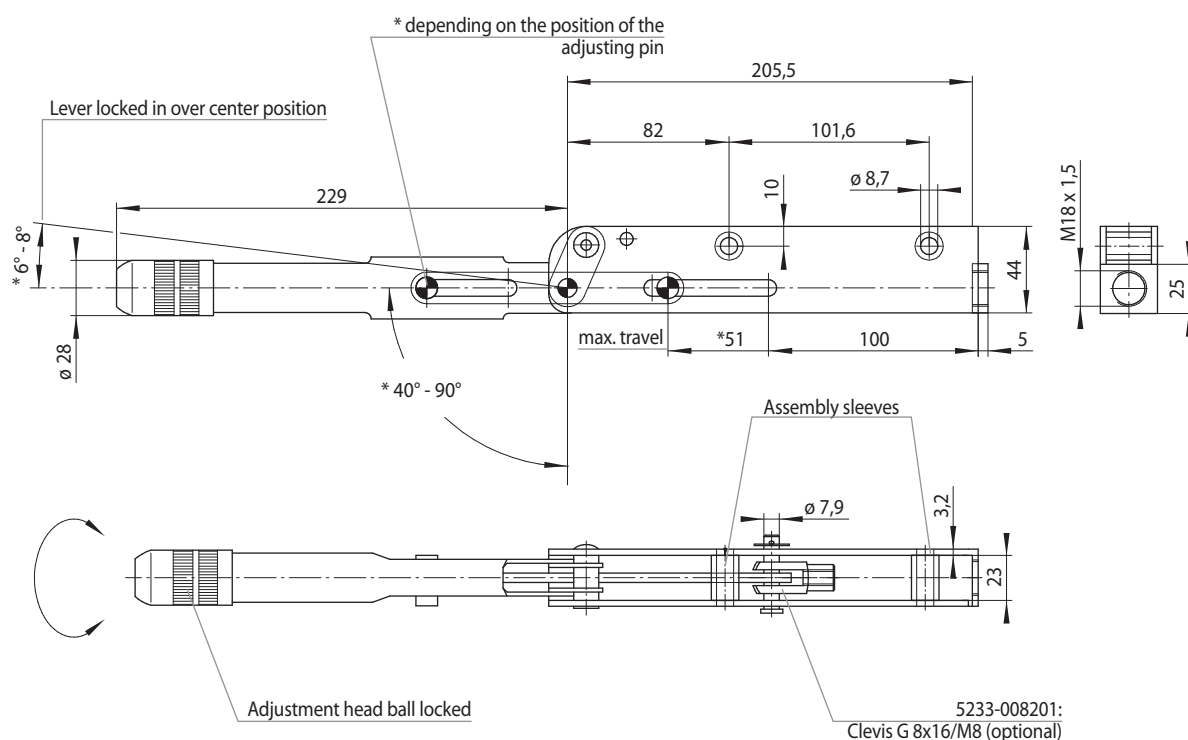
### Features

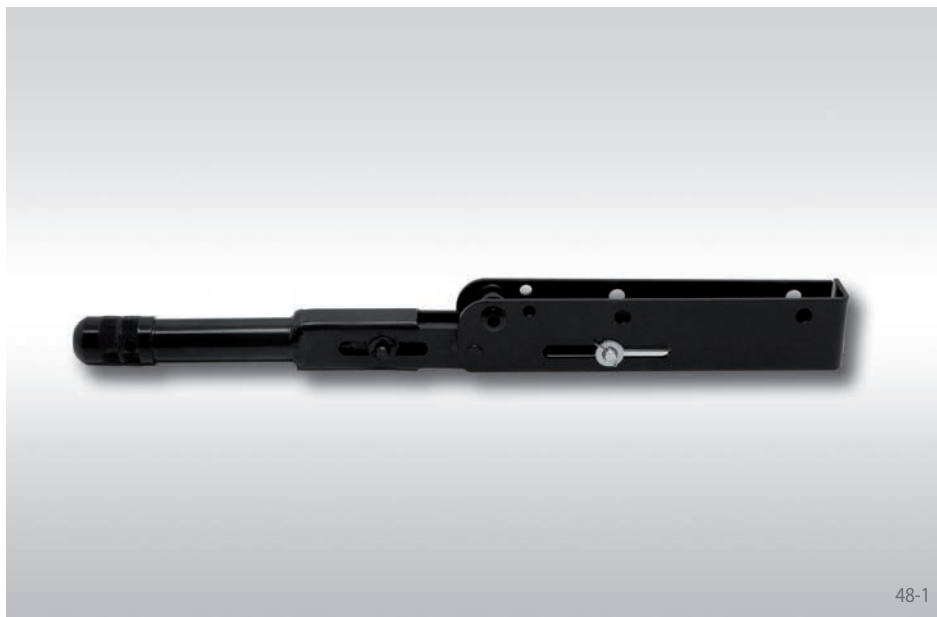
- Over center locking
- 2 positions: OPEN and CLOSED
- Travel adjustable via adjustment button
- Connection for push/pull cable
- Bulkhead endfitting

Art.-No.: 4561-000001-S50452

### Accessories for B 5 ... series hand brake lever

Please see page 53.





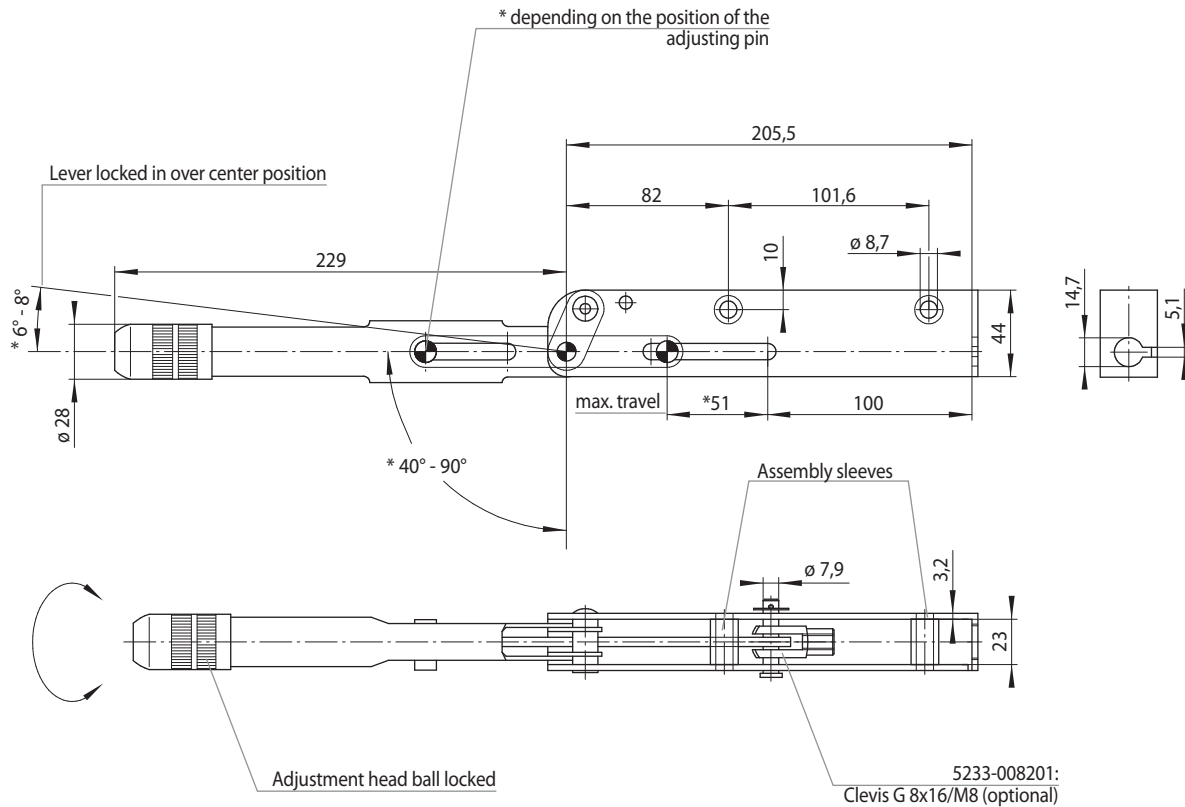
### Features

- Over center locking
- 2 positions: OPEN and CLOSED
- Travel adjustable via adjustment button
- Connection for push/pull cable
- Insert endfitting

Art.-No.: 4561-000001-S50401

### Accessories for B 5 ... series hand brake lever

Please see page 53.







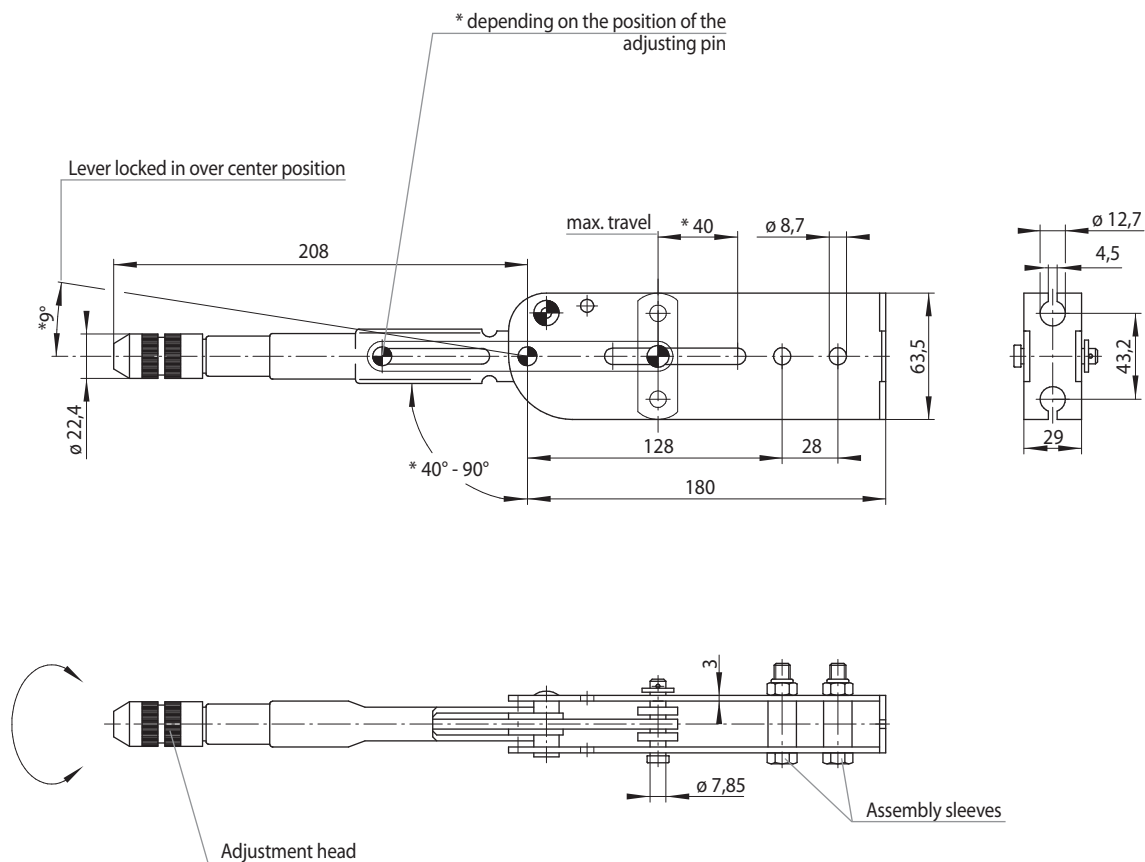
### Features

- Over center locking
- 2 positions: OPEN and CLOSED
- Travel adjustable via adjustment button
- Connection for push/pull cable
- Insert endfitting

Art.-No.: 4561-000001-S50513

### Accessories for B 5 ... series hand brake lever

Please see page 53.





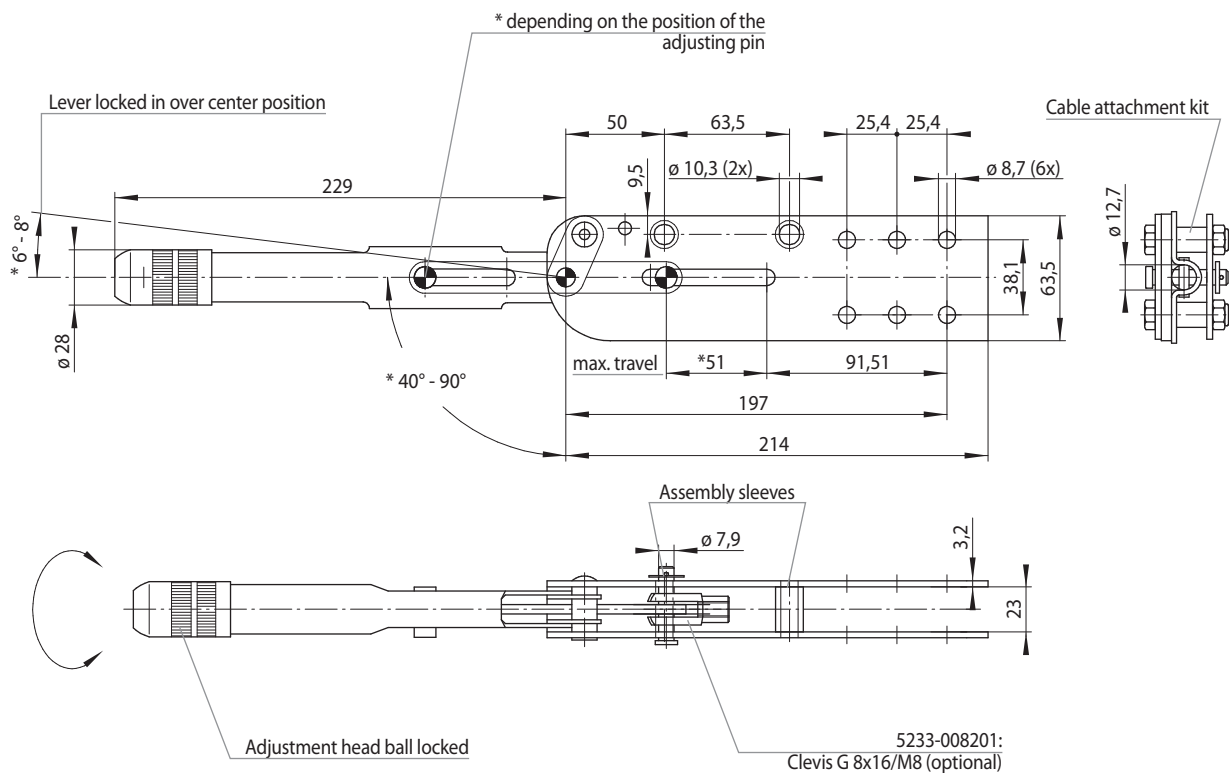
### Features

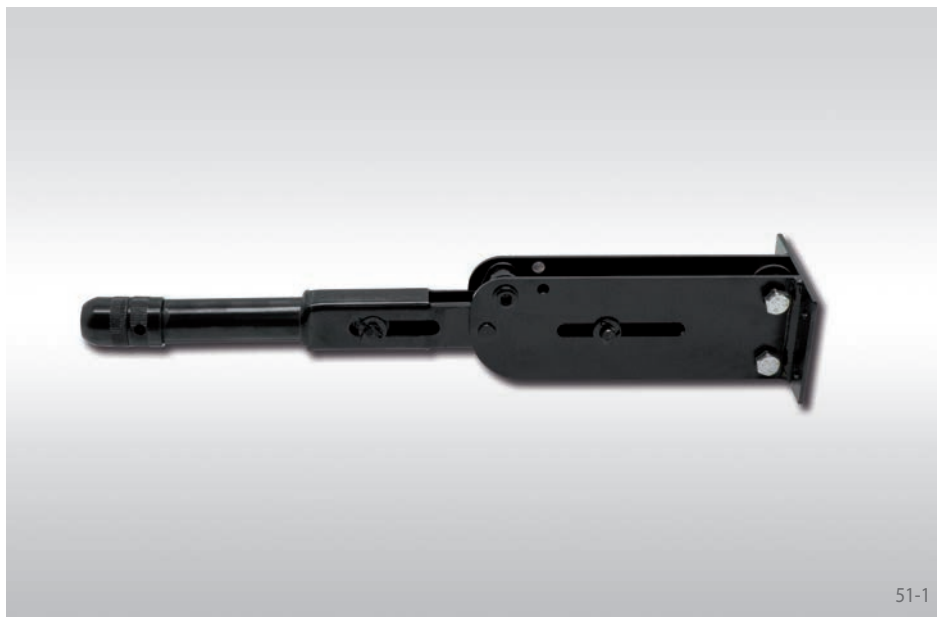
- Over center locking
- 2 positions: OPEN and CLOSED
- Travel adjustable via adjustment button
- Connection for push/pull cable
- Clamp endfitting

Art.-No.: 4561-000001-S50408

### Accessories for B 5 ... series hand brake lever

Please see page 53.





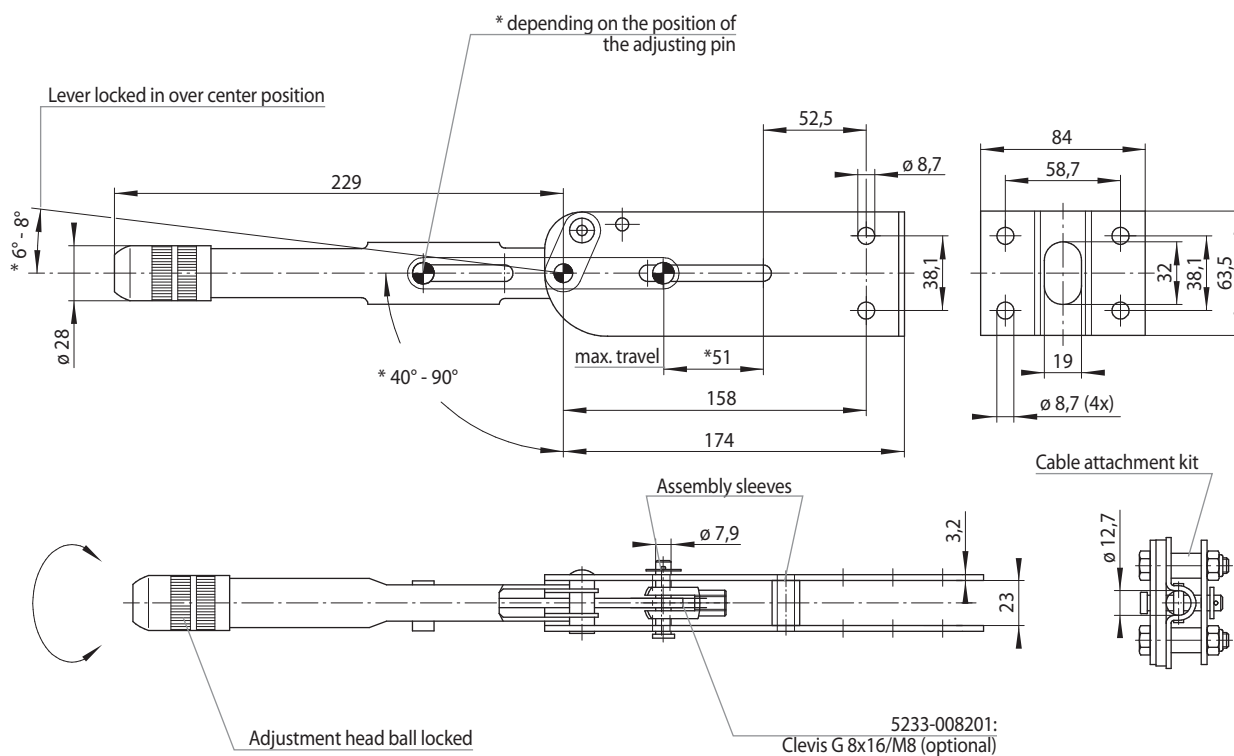
### Features

- Over center locking
- 2 positions: OPEN and CLOSED
- Travel adjustable via adjustment button
- Connection for push/pull cable
- Clamp endfitting

Art.-No.: 4561-000001-S50410

### Accessories for B 5 ... series hand brake lever

Please see page 53.



## Features

For pull forces: 1800 N permanent, 2400 N max.

Min. bend radius: 127 mm

Temperature range: -50 °C to +110 °C

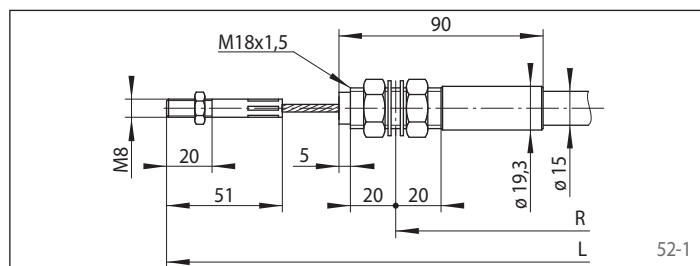
Steel parts galvanized (zinc-coated)

Rod ends made from stainless steel

With stainless steel strands  $\varnothing$  4 mm

## Lever side:

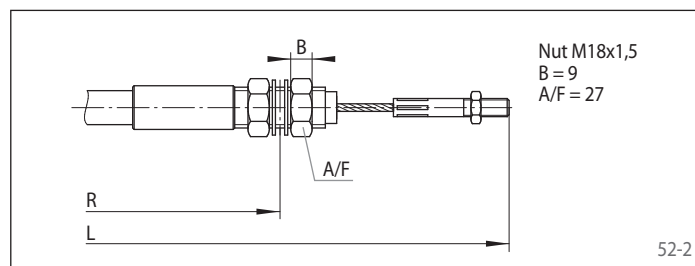
### TB



52-1

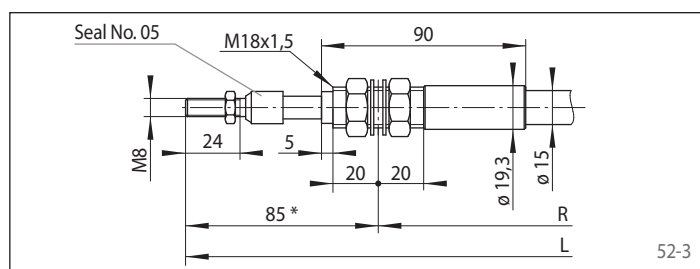
## Output side:

### TB



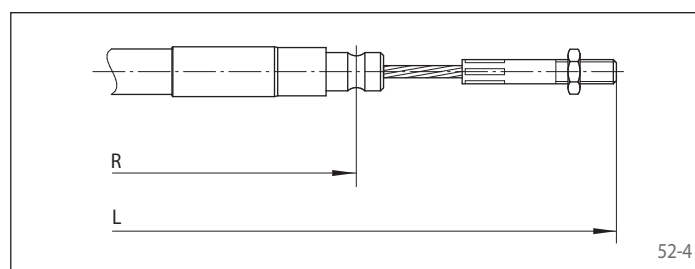
52-2

### TB05



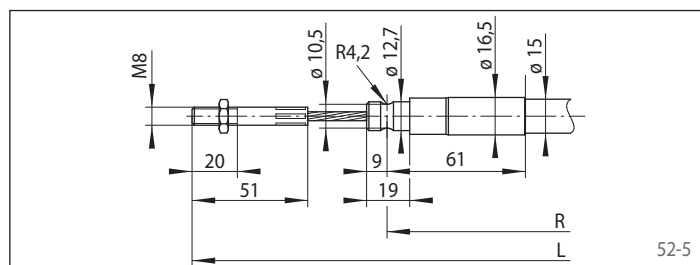
52-3

### GB



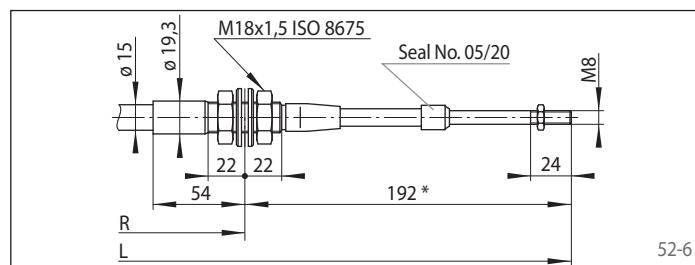
52-4

### GB



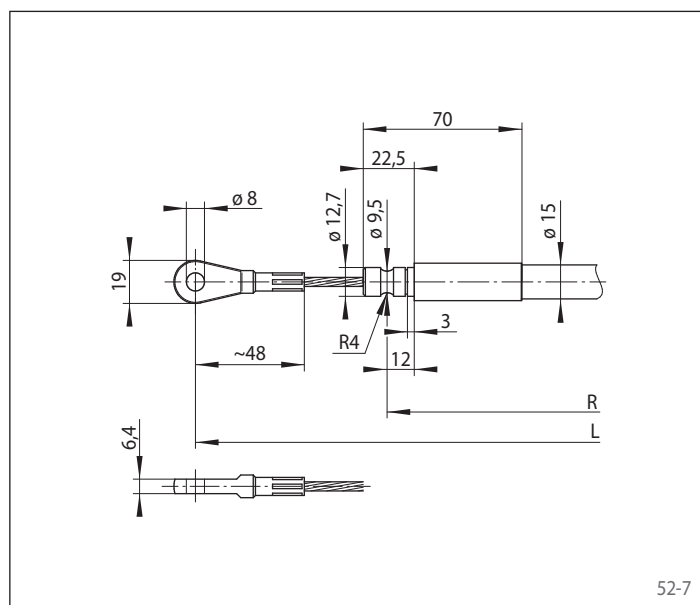
52-5

### T05M / T20M



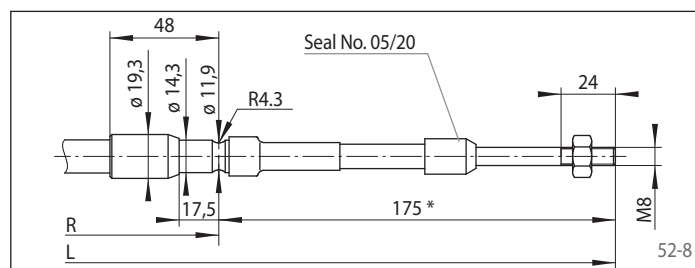
52-6

### CP



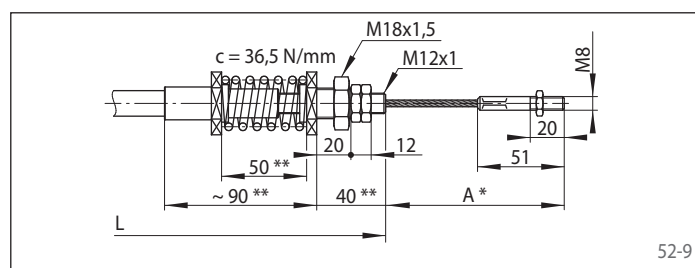
52-7

### G05M / G20M



52-8

### COMP



52-9

\* Brake lever open • \*\* Spring compensating device set to 380 N

Other output sides upon request

Lever locked in over center position

Electric switch

\*6° - 8°

Part	Art.-No.	Description	Circuit diagram image - contact pressed
①	3561-001804	El. switch kit CLOSER	
②	3561-001821	El. switch kit OPENER	

53-1

Electrical switch for hand brake lever

Two switches can optionally be supplied:

- ① Electrical CLOSER
- ② Electrical OPENER

Switch voltage: max. 24 V

Switch current: max. 4 A

Switch capacity: max. 48 W

Switches are supplied with attachment parts.



Plastic handle for hand brake lever

Plastic handle for hand brake lever B 50513

Art.-No.: 5220-000513-000000

Plastic handle for hand brake lever B 504xx upon request.

Lever locked in over center position

\*6° - 8°

Adjustment head ball locked

\* depending on the position of the adjusting pin

5233-008201:  
Clevis G 8x16/M8

53-3

Brake lever system for RINGSPANN brake calipers DV 020 MKM and DH 020 MKM

Brake caliper manually activated - manually released

The pressure pin with a spring mechanism compensates the wear of the brake pads during the braking procedure (lever locked in over center position).

Seal No. 05

M8

M18x1,5

25

5

40

105

ø 19,3

ø 15

10

30

ø 4

~ 90

L1±5

50

Clevis  
G8x32 / M8

\* Spring compensating device set to 380 N

Brake caliper DV 020 MKM

Brake opened

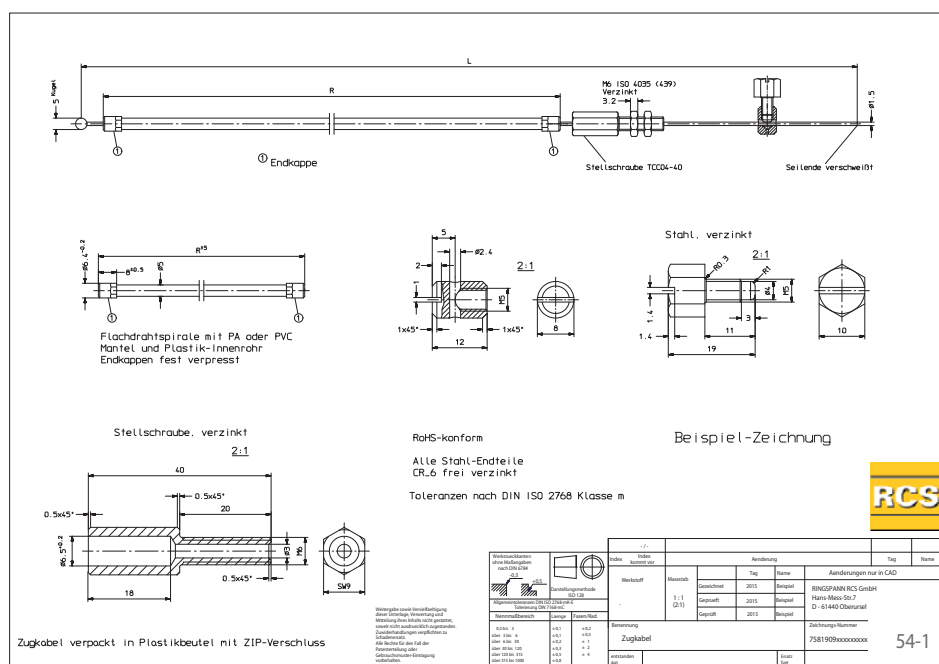
53-4



The pull only cable for the transfer of pulling forces is generally manufactured for a specific application case of the individual customer, manufacturer drawings or models.

The exemplary end parts on display on the following pages reflect the wide variety of possibilities for combination.

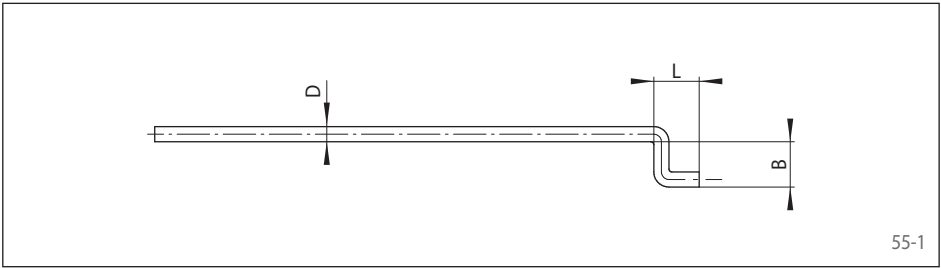
Exact dimensions and customer-tailored end parts are available upon request.



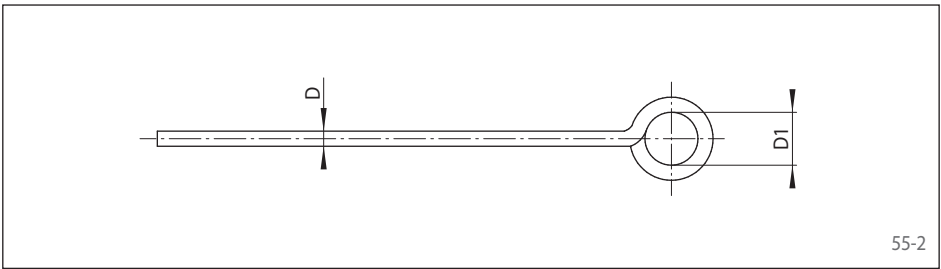
### Sample sketches for pull only cables

- Pull only cable with end caps and one-sided adjusting pin
- Steel cable with a ball end and screw nipple
- For the flexible transmission of pull force and travel
- Deviating designs can be manufactured upon request

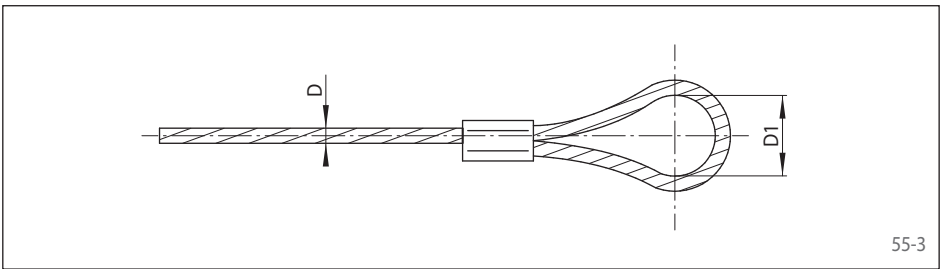
**Z-wire end**



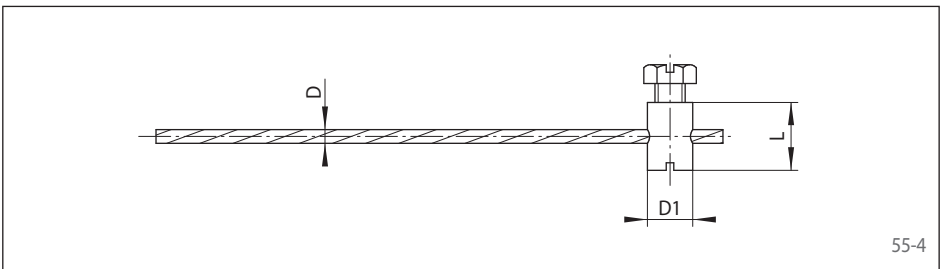
**Wire spiral**



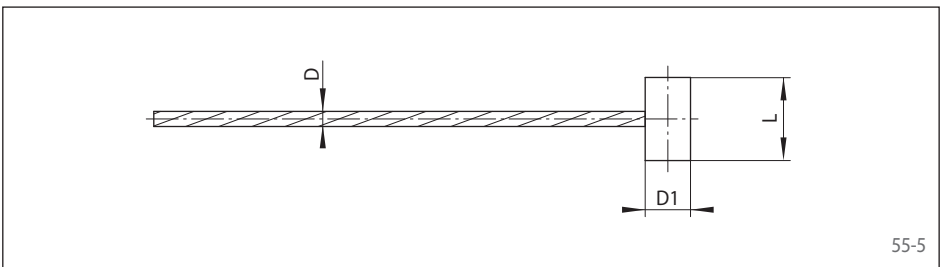
**Loop end**



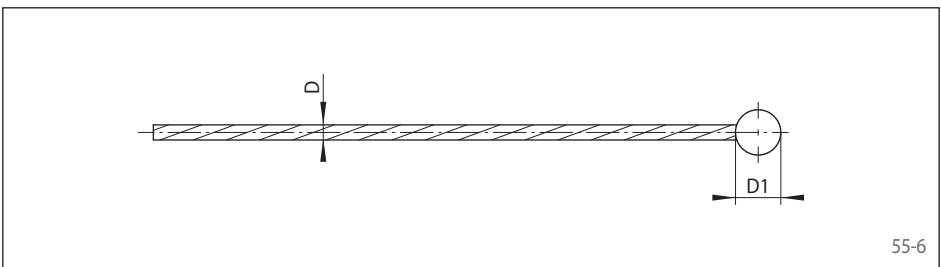
**Screw nipple**



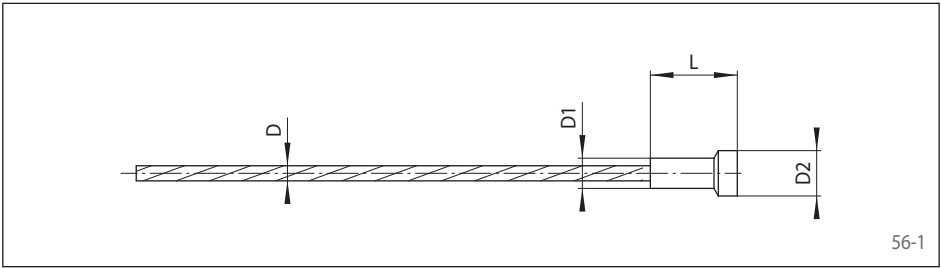
**Barrel nipple**



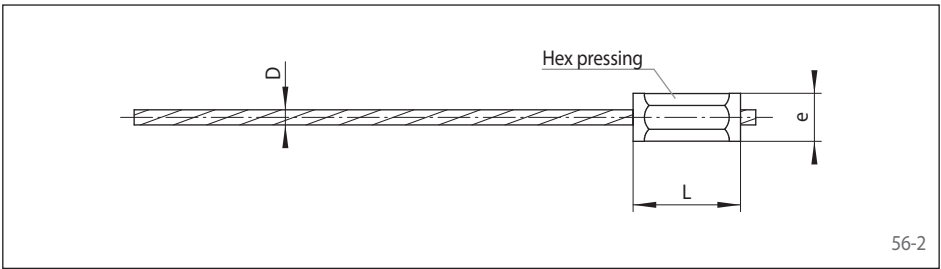
**Ball**



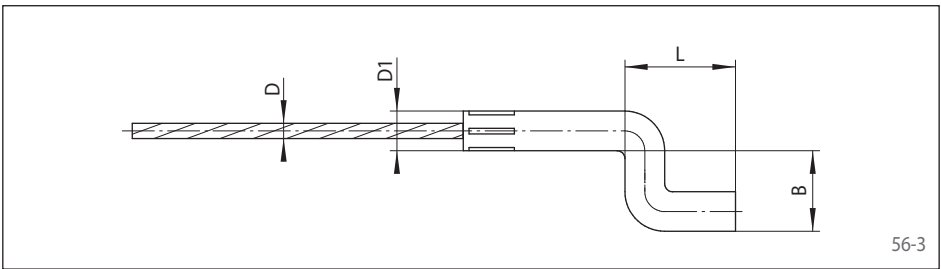
**B-nipple**



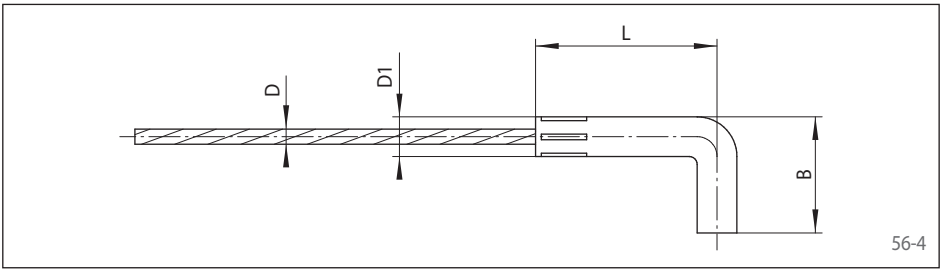
**Longitudinal nipple**



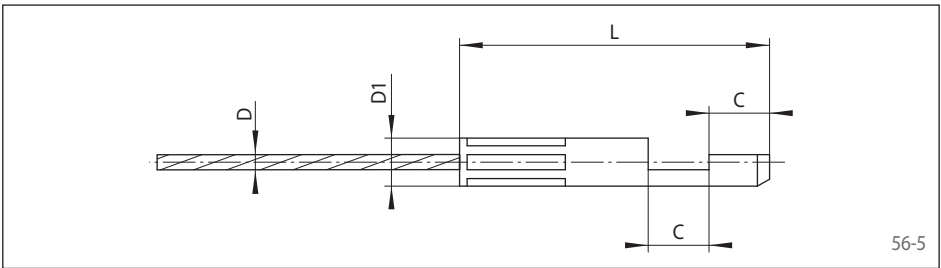
**Z-nipple**



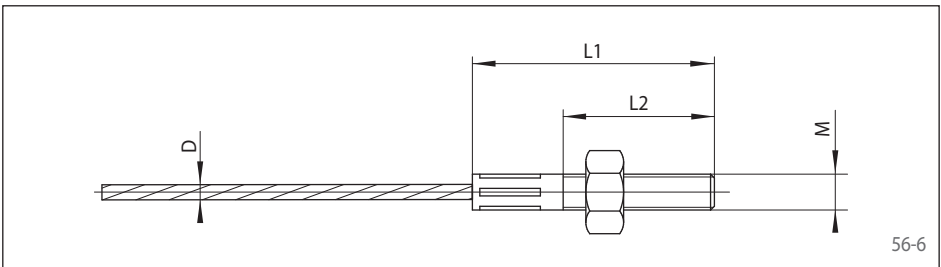
**Hook**



**Quick release joint**

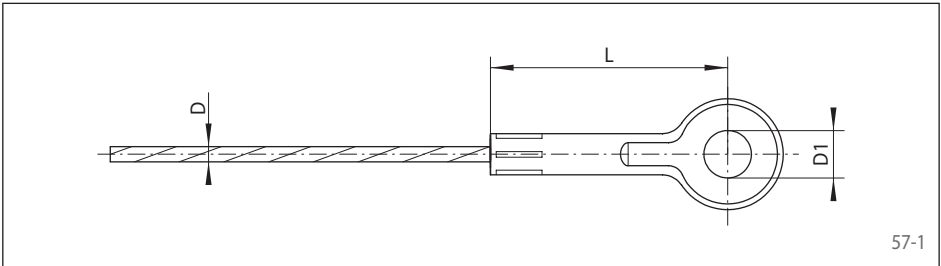


**Rod end with thread**

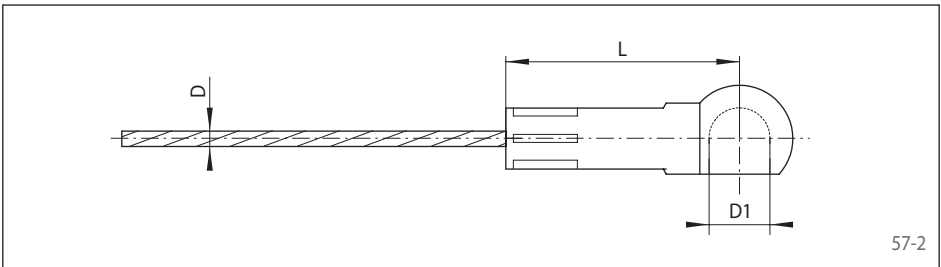




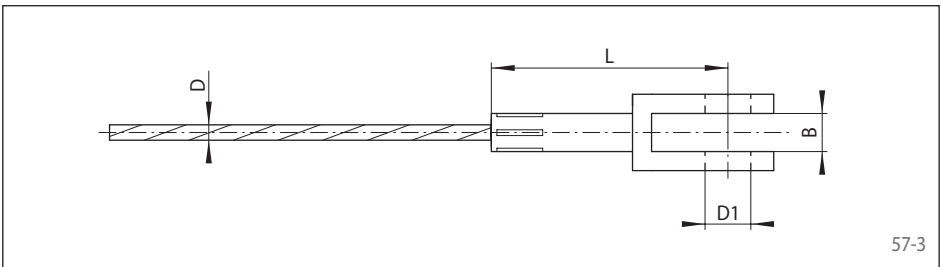
**Drawbar eye**



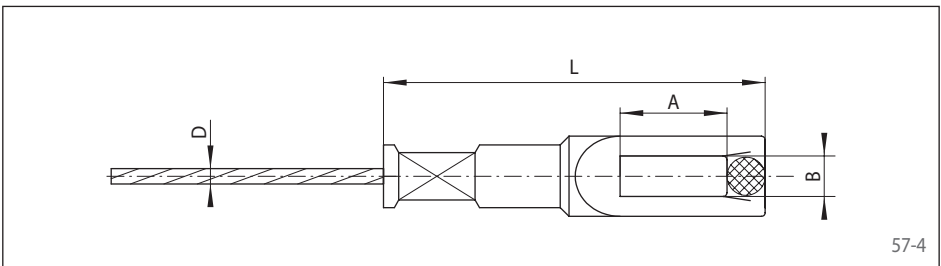
**Ball socket**



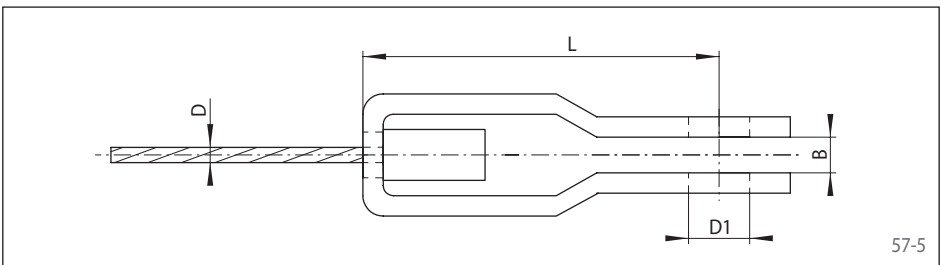
**Clevis**



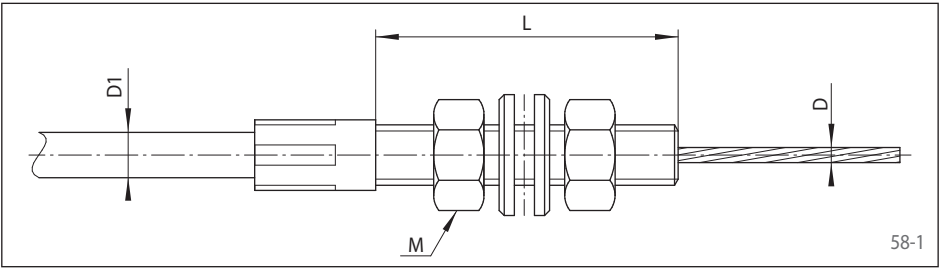
**Tension strap**



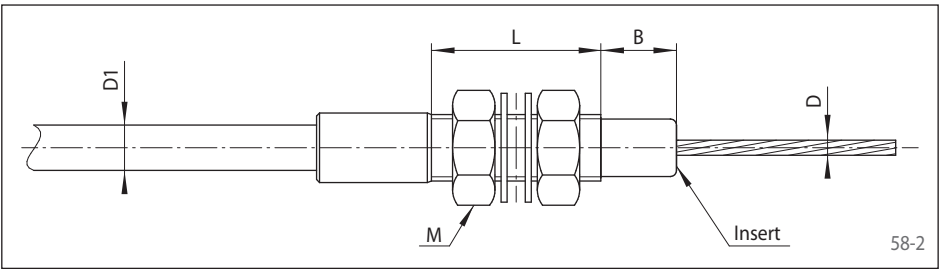
**Metal strap**



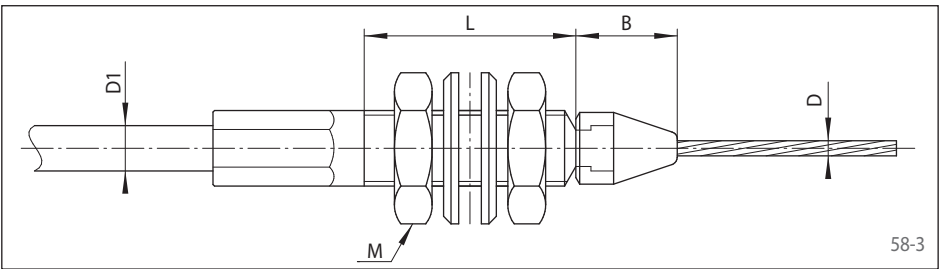
Thread cap



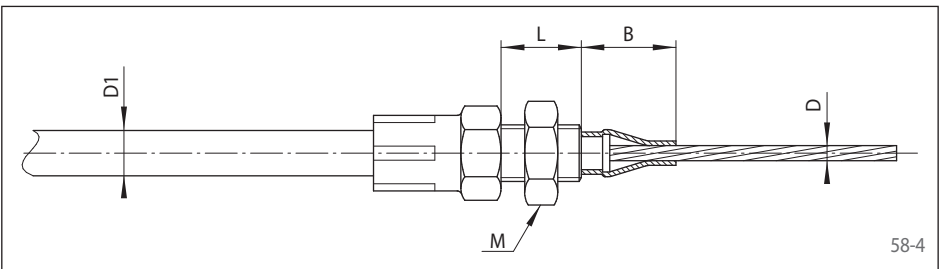
Thread cap with insert



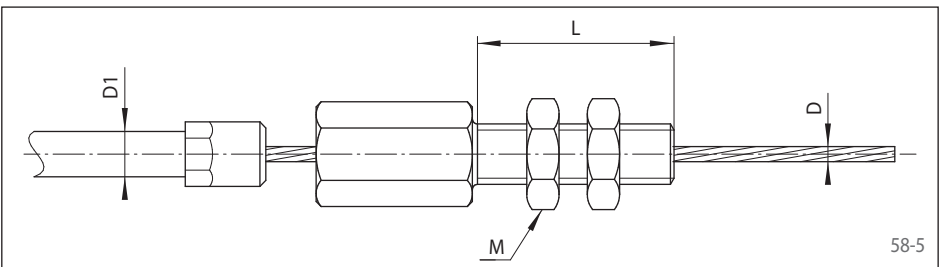
Base cap with seal



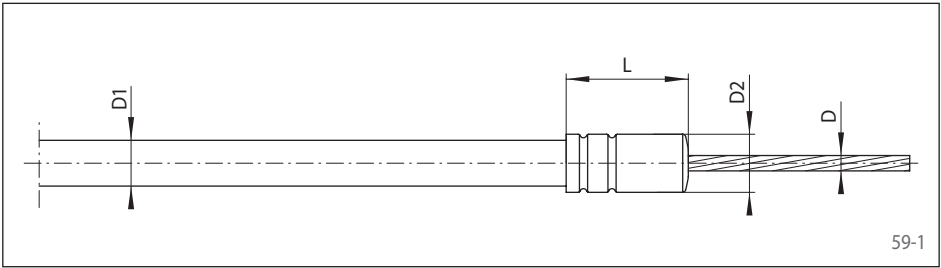
Base cap with rubber seal



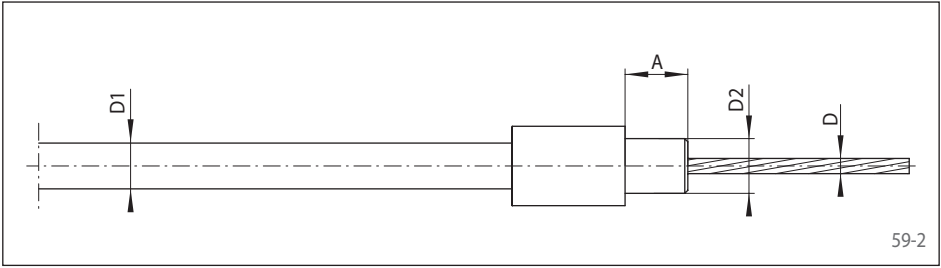
Adjusting screw



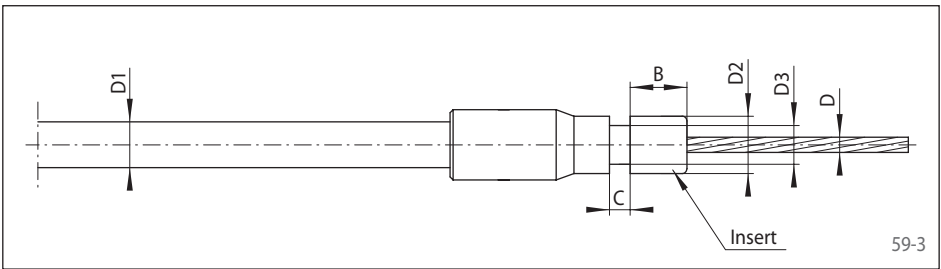
End cap



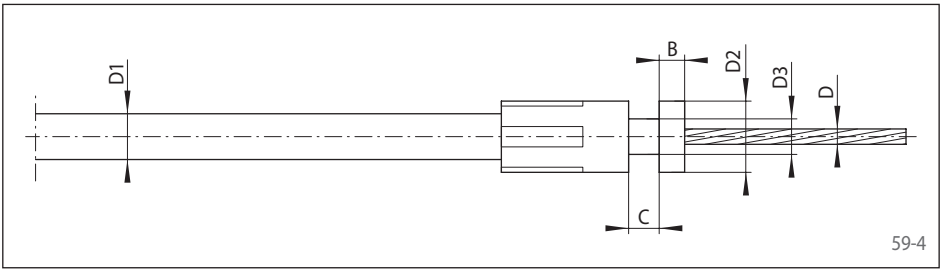
Base cap



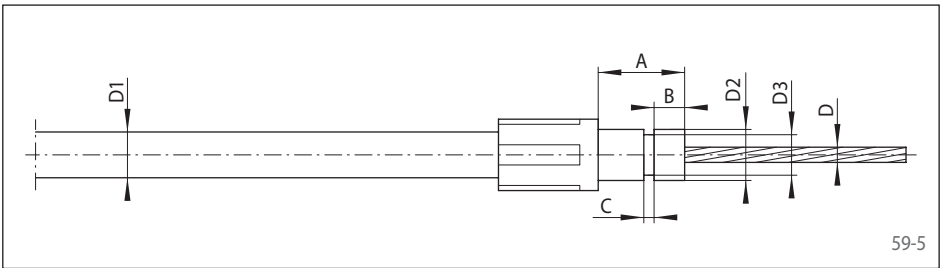
Clamp endfitting with front end insert



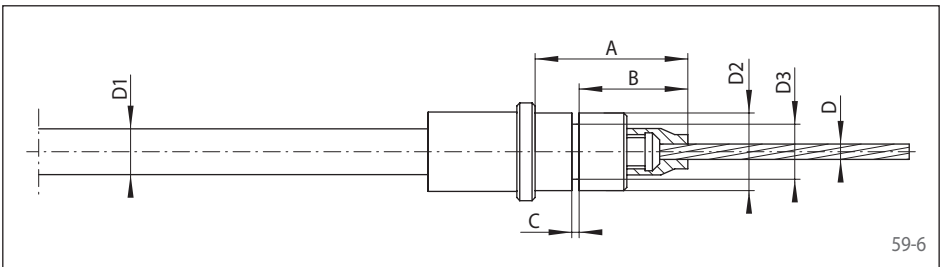
Clamp endfitting



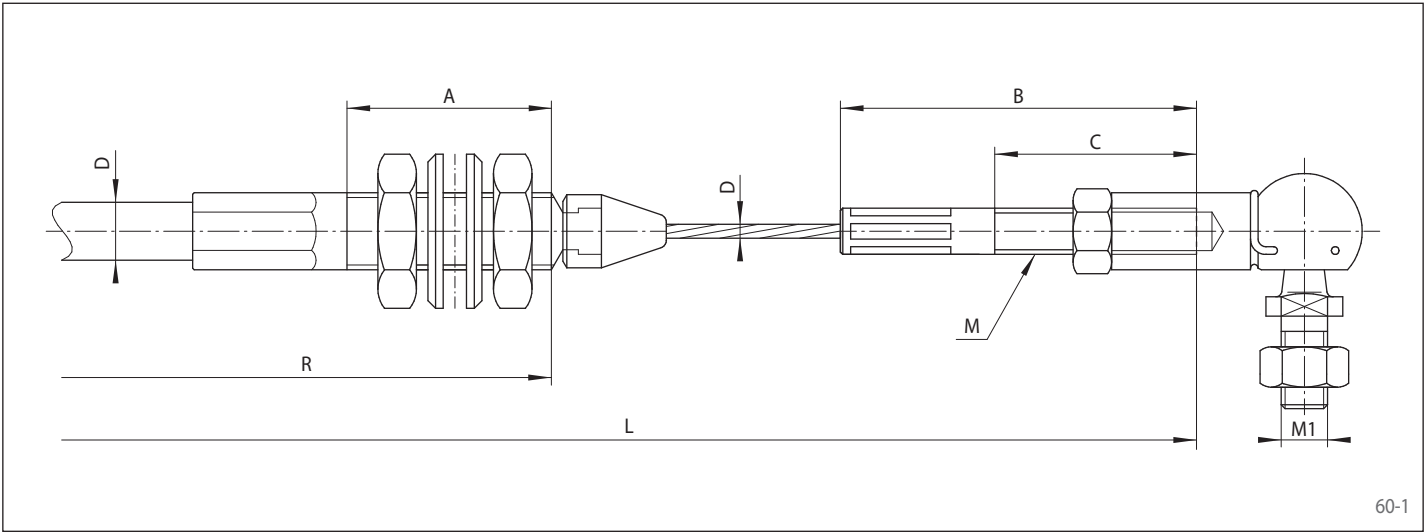
Base cap for safety clip



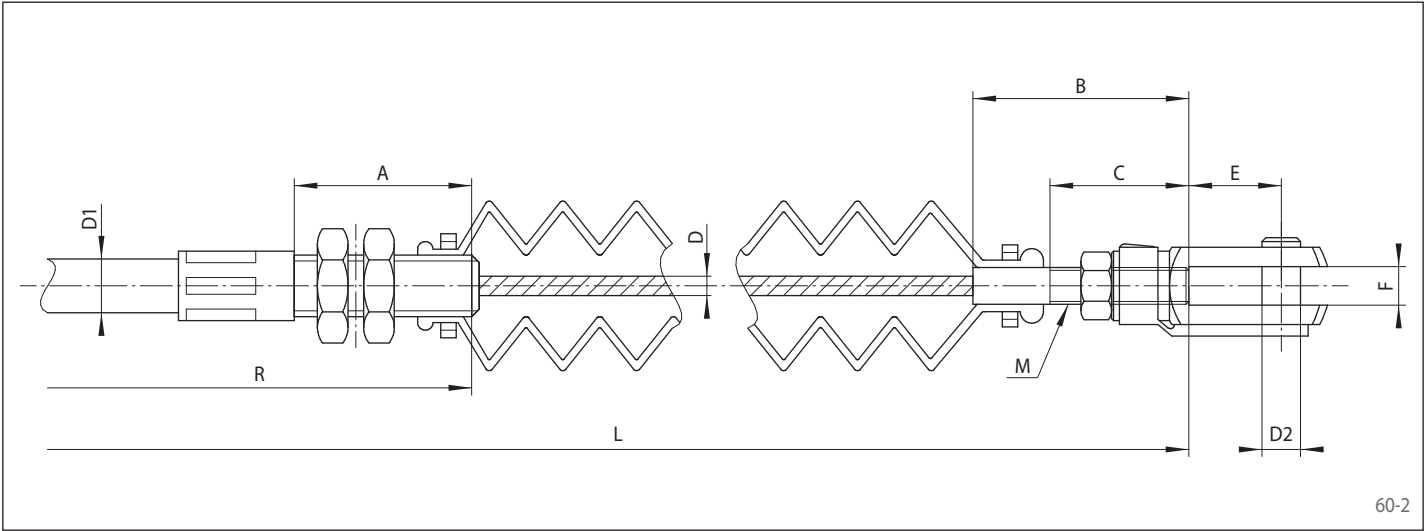
Base cap for safety clip with seal



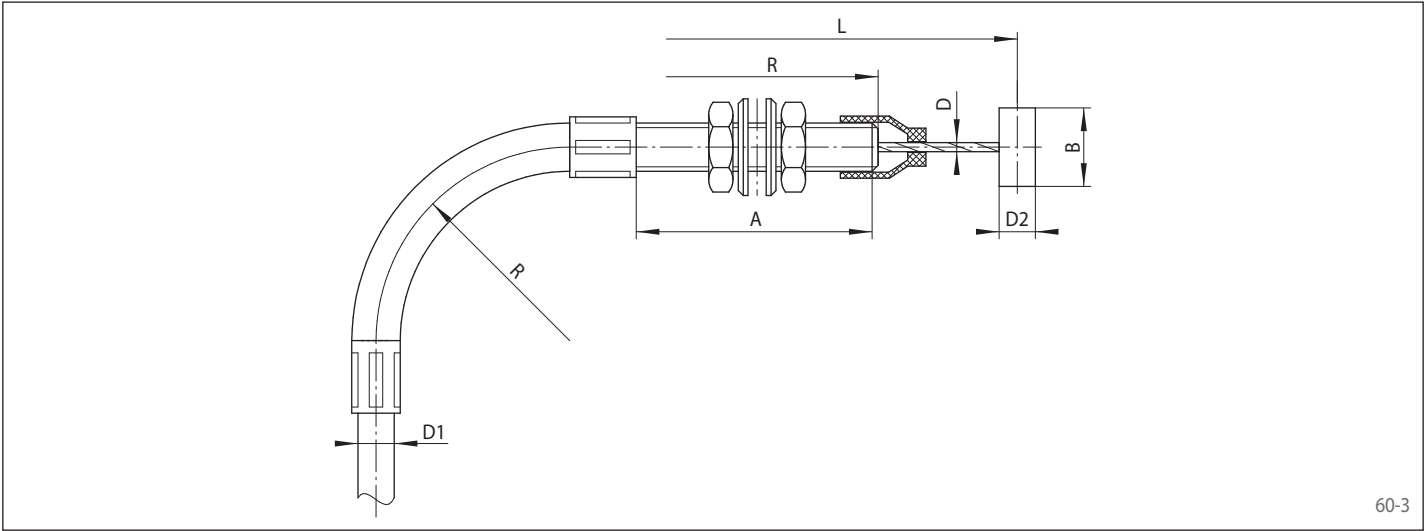
Bulkhead endfitting with wiper seal



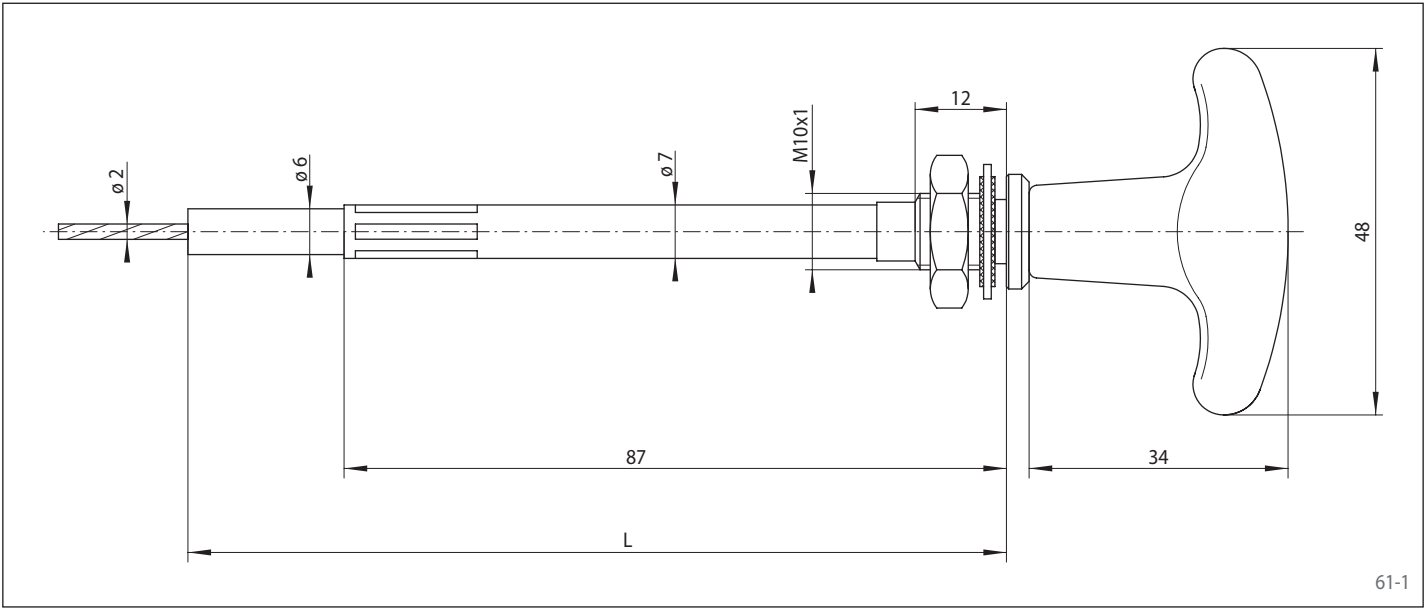
Bulkhead endfitting with bellow



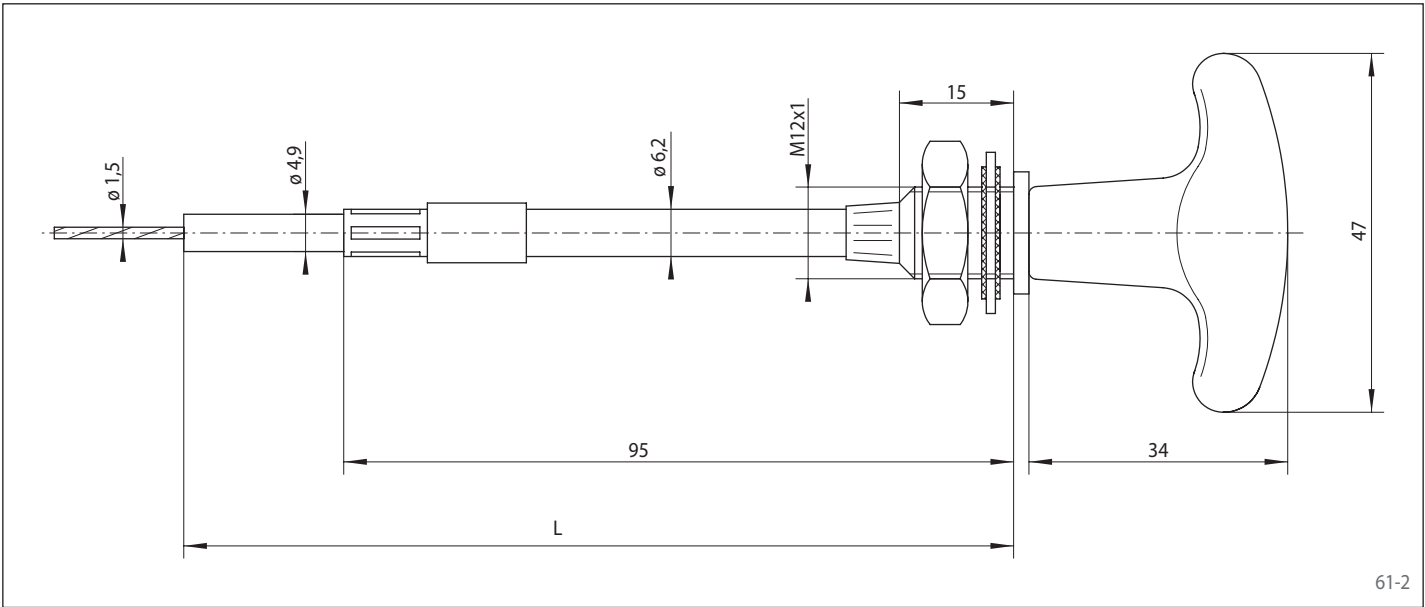
Bulkhead endfitting with tube end



Travel 60 mm



Travel 45 mm



# Product overview

## RCS® Remote Control Systems

**RINGSPANN®**  
Remote Control Systems



**RCS® push/pull cables**  
Flexible elements for reliable transmission of axial forces over long distances with short installation radii.



**RCS® pull-only cables**  
Flexible elements for transmitting pull forces with various standard endparts or according to customer requirements.



**Pedals**  
Throttle pedals with mechanical cables, pedals for electronic setpoint transmitters from leading manufacturers, brake pedal systems.



**Levers**  
For different gearboxes: manual, automatic and hydrostatic. Brake levers and controls for general applications.



**Large selection of accessories**  
Clevises, angle joints, ball joints, mounting brackets, swivel flanges, clamps, clamping brackets, etc.

## Freewheels

**RINGSPANN®**  
Power Transmission



**Backstops**  
Automatic protection against reverse running of conveyor belts, elevators, pumps and fans.



**Overrunning Clutches**  
Automatic engaging and disengaging of drives.



**Indexing Freewheels**  
For gradual feed of materials.



**Housing Freewheels**  
Automatic engaging and disengaging for multimotor drives for installations with continuous operation.



**Cage Freewheels**  
For installation between customer-supplied inner and outer rings.

## Brakes

**RINGSPANN®**  
Power Transmission



**Industrial Brakes**  
Spring activated - pneumatically, hydraulically, electromagnetically or manually released.



**Industrial Brakes**  
Pneumatically activated - spring released.



**Industrial Brakes**  
Hydraulically activated - non-releasing or spring released.



**Industrial Brakes**  
Spring activated - hydraulically released.



**Clamping Units**  
Spring activated - hydraulically or pneumatically released. For secure and precise positioning of piston rods.

## Precision Clamping Fixtures

**RINGSPANN®**  
Clamping Fixtures



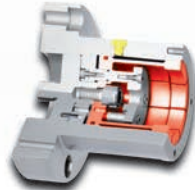
### Bonded Disc Packs

Precision Clamping Fixtures based on the unique method of the RINGSPANN Clamping Disc.



### Taper Collets

Precision Clamping Fixtures for clamping thin or thick walled workpieces on long clamping length.



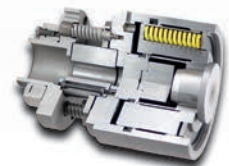
### Taper Sleeves

Precision Clamping Fixtures for clamping compact workpieces with short or long clamping lengths.



### Flat Elements

Very short Precision Clamping Fixtures for clamping thick walled workpieces with large clamping diameter and very short clamping depths.



### Clamping Clutches

For rapid changes and precise clamping of profile rollers or printing rollers in printing presses in gravure and flexographic printing.

## Shaft-Hub-Connections

**RINGSPANN®**  
Power Transmission



### Two-part Shrink Discs

External clamping connection for simple and secure mounting without torque wrench.



### Three-part Shrink Discs

External clamping connection for the fastening of hollow shafts on solid shafts.



### Cone Clamping Elements

Internal clamping connection in small dimensions for high torques.



### Star and Clamping Discs

Shaft-Hub-Connection for frequent clamping and release.



### Star Spring Washers

Axial spring element for pre-loading of ball bearings.

## Overload Clutches & Couplings

**RINGSPANN®**  
Power Transmission



### Torque Limiters with Screw Face

Reliable overload protection for tough operating conditions.



### Torque Limiters with Friction Linings

RIMOSTAT® Torque Limiter for constant slipping torque. Belleville Spring Torque Limiter for simple release.



### Force Limiters

Reliable axial overload protection in rods.



### Tru-Line Flange Couplings

Rigid, easily removable shaft coupling with backlash free cone clamping connections.



### Flexible Couplings

Large allowed radial and angular misalignments. Minimum resiliency.

## Germany

**RINGSPANN RCS GmbH**  
Hans-Mess-Straße 7  
61440 Oberursel  
Germany  
+49 61 72 67 68 50  
info@ringspann-rcs.de  
www.ringspann-rcs.com

## France

**SIAM - RINGSPANN S.A.**  
23 rue Saint-Simon  
69009 Lyon  
France  
+33 4 78 83 59 01  
info@siam-ringspann.fr  
www.ringspann.fr

## Great Britain, Ireland

**RINGSPANN (U.K.) LTD.**  
3, Napier Road  
Bedford MK41 0QS  
Great Britain  
+44 1234 3425 11  
info@ringspann.co.uk  
www.ringspann.co.uk

## Italy

**RINGSPANN Italia S.r.l.**  
V.le A. De Gasperi, 31  
20020 Lainate (MI)  
Italy  
+39 02 93 57 12 97  
info@ringspann.it  
www.ringspann.it

Netherlands, Belgium,  
Luxembourg

**RINGSPANN Benelux B.V.**  
Nieuwenkampsmaten 6-15  
7472 DE Goor  
Netherlands  
+31 547 26 13 55  
info@ringspann.nl  
www.ringspann.nl

Austria, Hungary,  
Slovenia

**RINGSPANN Austria GmbH**  
Kleegasse 9  
2624 Breitenau  
Austria  
+43 26 35 624 46  
info@ringspann.at  
www.ringspann.at

Sweden, Finland,  
Denmark, Norway,  
Baltic states

**RINGSPANN Nordic AB**  
Industrigatan 7  
61933 Trosa  
Sweden  
+46 156 190 98  
info@ringspann.se  
www.ringspann.se

## Switzerland

**RINGSPANN AG**  
Sumpfstrasse 7  
P.O. Box 3320  
6303 Zug  
Switzerland  
+41 41 748 09 00  
info@ringspann.ch  
www.ringspann.ch

## Spain, Portugal

**RINGSPANN IBERICA S.A.**  
C/Uzbina, 24-Nave E1  
01015 Vitoria  
Spain  
+34 945 22 77-50  
info@ringspann.es  
www.ringspann.es

## Asia

## Australia, New Zealand

**RINGSPANN Australia Pty Ltd**  
Unit 5, 13A Elite Way  
Carrum Downs Vic 3201  
Australia  
+61 3 9069 0566  
info@ringspann.com.au  
www.ringspann.com.au

## China, Taiwan

**RINGSPANN Power Transmission  
(Tianjin) Co., Ltd.**  
No. 21 Gaoyan Rd.  
Binhai Science and Technology Park  
Binhai Hi-Tech Industrial  
Development Area  
Tianjin, 300458  
P.R. China  
+86 22 59 80 31 60  
info.cn@ringspann.cn  
www.ringspann.cn

## India, Bangladesh, Nepal

**RINGSPANN Power Transmission  
India Pvt. Ltd.**  
GAT No: 679/2/1  
Village Kuruli, Taluka Khed  
Chakan-Alandi Road  
Pune - 410501, Maharashtra  
India  
+91 21 35 67 75 00  
info@ringspann-india.com  
www.ringspann-india.com

## Singapore, ASEAN

**RINGSPANN Singapore Pte. Ltd.**  
10 Ubi Crescent  
#04-99 Ubi Techpark  
Singapore 408564  
+65 9633 6692  
info@ringspann.sg  
www.ringspann.sg

## America

USA, Canada, Mexico,  
Chile, Peru

**RINGSPANN Corporation**  
10550 Anderson Place  
Franklin Park, IL 60131  
U.S.A.  
+1 847 678 35 81  
info@ringspanncorp.com  
www.ringspanncorp.com

## Africa and Middle East

## Maghreb, West Africa

**SIAM - RINGSPANN S.A.**  
23 rue Saint-Simon  
69009 Lyon  
France  
+33 4 78 83 59 01  
info@siam-ringspann.fr  
www.ringspann.fr

## South Africa, Sub-Saharan

**RINGSPANN South Africa (Pty) Ltd.**  
96 Plane Road Spartan  
Kempton Park  
P.O. Box 8111 Edenglen 1613  
South Africa  
+27 11 394 18 30  
info@ringspann.co.za  
www.ringspann.co.za